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Annual Activity Report

CONCERTO INITIATIVE

HOLISTIC

Holistic Optimisation Leading to Integration of Sustainable Technologies in Communities

Instrument (Integrated Project)
Thematic Priority

Period covered: Period 1
Start date of project: 01 June 2007

Date of preparation: 20 June 2008
Duration: 60 months

CONCERTO is co-funded by the European Commission

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LIST OF PARTICIPANTS

Participant Role	Participant Number	Participant name	Participant short name	Country
CO	1	Sustainable Energy Ireland	SEI	Ireland
CR	2	Dundalk Town Council	DTC	Ireland
CR	3	Louth County Council	LCC	Ireland
CR	4	Dundalk Institute of Technology	DKIT	Ireland
CR	5	ESB Networks	ESB	Ireland
CR	6	ESCO (to be appointed)	ESCO	Ireland
CR	7	Mödling Town Council	MÖD	Austria
CR	8	University of Applied Sciences Wiener Neustadt	FHWN	Austria
CR	9	SOLAR 4 You Consulting	SOL4	Austria
CR	10	Medilikke	MDK	Austria
CR	11	Technisches Büro Becker	TBB	Germany
CR	12	City of Neuchâtel	NTEL	Switzerland
CR	13	Canton of Neuchâtel	NE	Switzerland
CR	14	Planair SA	PLAN	Switzerland
CR	15	Ecole polytechnique fédérale de Lausanne	EPFL	Switzerland
CR	16	Centre Suisse d'électronique et de microtechnique	CSEM	Switzerland
CR	17	Adhoco AG	ADH	Switzerland
CR	18	Ecoparc Association	ECO	Switzerland
CR	19	Bauart Architectes et Urbanistes SA	BAU	Switzerland
CR	20	City of Aachen	AAC	Germany
CR	21	Newry and Mourne District Council	NEW	UK
CR	22	Italian Ministry for the Environment, Land and Sea	MATT	Italy
CR	23	Industrial Development Agency (Ireland)	IDA	Ireland
CR	24	Health Services Executive	HSE	Ireland

CO = Coordinator
CR = Contractor

SUMMARY:

The HOLISTIC project aims to stimulate a paradigm shift in the use of energy within communities to more sustainable patterns. It is based in three selected zones in Dundalk (Ireland), Mödling (Austria) and Neuchâtel (Switzerland). Each zone is representative of a typical community, since they contain within their borders every aspect of community life, i.e. housing, schools and colleges, hospital, hotel, retail and leisure facilities and industry. HOLISTIC aims to demonstrate that action taken on all aspects of a community, not just sub-sets of it, brings improved results which are of wide applicability.

The project has got off to a good start in its first year, with considerable progress being made on the various research work packages and on the installation of a range of renewable and energy efficiency technologies. Although for the most part this is still work in progress, a number of projects are already implemented. Examples include the PV array on the stadium in Neuchâtel and the refurbished school in Dundalk with a 60% improvement in energy performance. Interval meters and renewable street lighting have been installed in Dundalk and are being trialled. Thermographs of Neuchâtel and Mödling have been made and will be used in future work in the project. The first survey of public perceptions in the three communities has been made that will form a baseline against which to measure changing attitudes as the project proceeds.

HOLISTIC and the underlying CONCERTO and `holistic' philosophies have been actively promoted and disseminated, not only in the countries of the three communities but also in the associated communities of Newry (UK), Aachen (Germany) and in Italy and the Mediterranean area. There has also been close cooperation with CONCERTO Plus.

The project is very complex, with some 40 work packages. The management structures that have been put in place have proved effective and ensured that the vast majority of milestones have been achieved, that potential problems have been identified early and remedial action taken. As a consequence, the project remains on course to deliver all its objectives even if a few may be delivered a little later than originally foreseen.

TABLE 1: DELIVERABLES LIST IDENTIFIED IN THE 0-18 MONTH PLAN.

List all deliverables, giving date of submission and any proposed revision to plans.

DEL. NO.	DELIVERABLE NAME	WORK PACKAGE NO.	DATE DUE	ACTUAL / FORECAST DELIVERY DATE	ESTIMATED INDICATIVE PERSON-MONTHS *)	USED INDICATIVE PERSON-MONTHS *)	LEAD CONTRACTOR
1	Questionnaire designed	1.1	30.9.07	30.09.07	0.5	0.5	FHWN
2	Initial survey of public opinion in the zones	1.1	30.11.07	30.11.07	3	5.17	FHWN
3	Prototype of LESO SUNtool For trial in other communities	1.2	30.11.08	30.11.08	34	-	EPFL
4	DSEZ-EM proved in Dundalk for trial in other communities	1.2	30.11.08	31.05.09	1	-	DKIT
5	Validated list of regulations and framework conditions to be analysed	1.4	30.11.08	30.11.08	9	-	PLAN
6	Aerial thermograph taken.	1.5	31.05.08	31.05.08	5	2.75	PLAN
7	Ground Heating control system (hardware and software)	1.6	30.11.08	30.11.08	10	-	ADH
8	Economic model for flow battery developed	1.7	31.1.08	31.01.08	6	2.4	DKIT
9	Installation of metering equipment	1.7	30.5.08	30.05.08	1	1	DKIT
10	ESCo joint venture partner selected	2D1	30.5.07	31.12.08	1	-	SEI
11	Engineering of distributed energy scheme complete	2.D1	30.5.08	31.12.08	10.5	-	ESCO
12	Wind turbine erected and connected	2.D2	31.10.08	30.09.2010	7.5	-	ESCO
13	Lighting columns installed	2D3	30.5.08	31.05.09	2	-	IDA
14	House insulation upgrades complete	2D4	30.11.07	30.11.07	1	-	DTC
15	Heating systems installed (34 wood pellet stoves, 33 condensing gas boilers)	2D4	30.5.08	30.5.08	1	0.1	DTC

16	Refurbishment of DKIT and O'Fiach college complete	2D5	30.11.08	30.07.07	3	0	DKIT
17	Management systems installed in hotel and student accommodation	2D5	30.5.08	31.07.07	1	0	DKIT
18	New eco houses constructed	2D6	30.5.08	30.5.08	2	0.5	SEI
19	Commence construction of new eco-office block	2D7	30.9.07	31.11.08	2	0	DKIT
20	Smart meters installed	2D8	30.5.08	30.4.08	2	2.5	ESB
21	Energy Bureau Service provider selected	2D9	30.9.07	31.07.08	1	-	LCC
22	Energy Bureau in operation	2D9	31.1.08	31.01.09	1	-	LCC
23	First annual report completed	2D9	30.11.08	31.07.09	1	-	LCC
24	Construction site for hybrid renewable storage demo plant defined, design completed and construction schedule agreed	2M1	30.5.08	30.05.08	7	5.7	MOD
25	Construction site for Building Integrated PV (BIPV) defined, design completed and construction schedule agreed	2M2	31.8.08	31.07.09	2	-	TBB
26	Design of Solar Roof Programme Mödling approved by community and regional authorities	2M2	30.5.08	30.5.08	1	2	MOD
27	Construction sites for biomass CHP defined, design completed and construction schedule agreed	2M3	30.5.08	31.05.09	2	1	MOD

28	Cluster analysis of older (>30 years old) buildings; Simulation and analysis results	2M4	30.5.08	30.5.08	6	3.2	MOD
29	Analysis, simulation and evaluation results for eco commercial building	2M5	30.5.08	30.05.08	4	1.5	SOL4
30	Analysis, simulation and evaluation results for load balancing	2M6	30.5.08	30.05.08	2	2.5	TBB
31	Design of two pilot systems for load balancing	2M6	30.11.08	30.11.08	2	-	TBB
32	Simulation of three scenarios with DEMS	2M7	30.5.08	31.01.09	6	-	TBB
33	New 750 m^2 PV plant on stadium roof	2N1	30.5.08	31.05.07	0.5	-	NTEL
34	Upgraded PV tracking plant	2N1	30.5.08	31.11.09	0.5	-	NTEL
35	New hydro plant at sewage plant	2N2	30.5.08	31.05.09	0.5	-	NTEL
36	Report concerning the new hydro plant sewage plant + progress of the project of retrofitted hydro plant *La Serrière*	2N2	30.11.08	31.11.09	0.5	-	NTEL
37	Report concerning the achieved energy savings in the district heating and the progress of the heat pump installation.	2N3	30.11.08	31.11.08	1	-	PLAN
38	Report concerning the retrofitted building *Les Saars 95*	2N4	30.11.08	30.11.08	1	-	PLAN

39	A detailed project plan for the process of retrofitting a historic building to the standard of a new one	2N5	30.11.08	30.11.08	0	-	NE
40	A report concerning the first step of retrofitting of the municipal swimming pool (equipped with new heat pump and condensation boilers)	2N6	30.11.08	30.11.08	0.5	-	NTEL
41	Report concerning the metering of the energy consumption at the hospital during one year	2N7	30.11.08	30.11.08	0.5	-	NTEL
42	Report concerning seven new eco buildings: 6 blocks with 100 flats and a high school as well as the progress in the planning of the commercial building	2N8	30.11.08	30.11.08	0.5	-	PLAN
43	List of buildings to be optimised, with agreement of the owners	2N9	30.11.08	30.11.08	2	-	PLAN
44	First two training courses delivered, as approved by Project Board	3.1	30.11.08	30.11.08	4	-	SEI
45	Project Board and Community Steering Groups established	4.1	31.7.07	31.7.07	4	0.5	SEI
46	Project intranet operational	4.2	30.11.07	30.11.07	1	1.98	SEI
47	Presentation at events in Ireland	5.2	30.11.08	30.11.08	2	-	SEI
48	Application of HOLISTIC to Newry development	5.2	30.11.08	30.11.08	2	-	SEI

49	Dissemination plan agreed with Aachen	5.3	30.11.08	30.11.08	3	-	MOD
50	Promotional material for Switzerland	5.4	30.5.08	30.5.08	3	2.33	ECO
51	Selection of CONCERTO communities in Italy	5.5	30.11.07	30.11.07	2	-	MATT
52	Start testing model in an Italian community	5.5	30.11.08	30.11.08	2	-	MATT

TABLE 2: MILESTONES LIST

List all milestones, giving date of achievement and any proposed revision to plans.

WORK PACKAGE NO.	MILESTONE NAME	DATE DUE	ACTUAL / FORECAST DELIVERY DATE	LEAD CONTRACTOR
1.1	Questionnaire designed	30 Sept 2007 (M4)	30 Sept 2007	FHWN
1.1	First survey completed	31 Dec 2007 (M7)	31 Dec 2007	FHWN
1.2	Test of emissions model tool in Industrial part of Dundalk SEZ	30 Nov 2007 (M6)	30 Nov 2007	DKIT
1.2	Prototype SUNTool software	30 Nov 2008 (M18)	30 Nov 2008	EPFL
1.2	Emissions modelling tool ready for testing in other communities	30 Nov 2008 (M18)	30 June 2009 (M25)	EPFL
1.4	Production of a validated list of regulations	30 Nov 2008 (M18)	30 Nov 2008 (M18)	PLAN
1.5	Aerial thermographs taken	31 May 2008 (M12)	29 Feb 2008 (M9)	NTEL
1.5	The report	30 Nov 2008 (M18)	30 Nov 2008 (M18)	NTEL
1.6	Better handling and optimised wireless control	30 Nov 2008 (M18)	30 Nov 2008 (M18)	ADH
1.6	Ground heating control system ready for installation	30 Nov 2008 (M18)	30 Nov 2008 (M18)	ADH
1.7	Develop economic spreadsheet	31 Jan 2008 (M8)	31 Jan 2008 (M8)	DKIT
1.7	Present first paper	31 Mar 2008 (M10)	31 Mar 2008 (M10)	DKIT
1.7	Installation of metering equipment	31 May 2008 (M12)	01 April 2008 (M11)	DKIT
2D9	Bureau tender issued	31 July 2007 (M2)	31 July 2008 (M14)	LCC
2D9	Bureau service provider selected	30 Sept 2007 (M4)	30 Nov 2008 (M18)	LCC
2D9	Bureau in operation	31 Jan 2008 (M8)	31 Jan 2009 (M20)	LCC
2D9	First annual report completed	30 Nov 2008 (M18)	31 July 2009 (M26)	LCC
2M1r	Construction site defined, operator organisation established, interfaces defined	30 Nov 2007 (M6)	30 Nov 2007 (M6)	MOD
2M1r	Economical viability proved, construction procedures defined…	31 May 2008 (M12)	31 May 2008 (M12)	MOD
2M1r	Approval by the Community and regional authorities	30 Nov 2008 (M18)	30 Nov 2008 (M18)	MOD
2M4r	Cluster analysis results of older buildings in Modling	31 October 2007 (M5)	31 October 2007 (M5)	MOD
2M4r	Simulation and evaluation of results	31 May 2008 (M12)		MOD
2M4r	Tendering, contracting and scheduling finalised	30 Nov 2008 (M18)		MOD
2M6r	Analysis, simulation and evaluation of results	31 May 2008 (M12)	31 May 2008 (M12)	TBB

2M6r	Design of two pilot systems	30 Nov 2008 (M18)	30 Nov 2008 (M18)	TBB
2M7	Implementation of planning data into the existing energy system model DEMS	30 Nov 2007 (M6)	30 Nov 2008 (M18)	TBB
2M7	Simulations of three predication scenarios with DEMS	31 May 2008 (M12)	31 Jan 2009 (M20)	TBB
5.2	Preparation of detailed marketing and promotional plan	30 Nov 2007 (M6)	30 Nov 2008 (M18)	SEI
5.2	Press releases, newspaper editorial	30 Nov 2007 (M6)	30 June 2008 (M13)	SEI
5.2	Inclusion in annual energy awareness week	31 May 2008 (M12)	Deleted as energy awareness week no longer exists.	
5.3	Dissemination plan developed	30 Nov 2008 (M18)	30 June 2008 (M13)	FHWN
5.4	Research & development – internet tool	31 July 2007 (M2)	31 July 2007 (M2)	ECO
5.4	Implementation – internet tool	31 May 2008 (M12)	31 May 2008 (M12)	ECO
5.4	Research and development of communication and participation strategies for citizens	31 July 2007 (M2)	31 July 2007 (M2)	ECO
5.4	Implementation – communication and participation strategies	31 May 2008 (M12)	31 May 2008 (M12)	ECO
5.5	CONCERTO communities selected	30 Nov 2007 (M6)	30 Nov 2007 (M6)	MATT
5.5	Start testing model	30 Nov 2008 (M18)	30 Nov 2008 (M18)	MATT
2D1	ESCO joint venture partner selected through competitive dialogue tendering	30 Nov 2007 (M6)	31 Dec 2008 (M19)	SEI
2D1	Contracts agreed between ESCO, energy utilities and energy service companies	31 Jan 2008 (M8)	31 Dec 2008 (M19)	SEI
2D1	Engineering of distributed energy schemes essentially complete, construction commences	31 May 2008 (M12)	31 Dec 2008 (M19)	SEI
2D1	Energy centre complete and supply energy to initial connected buildings	30 Nov 2008 (M18)	30 Nov 2009 (M30)	SEI
2D2	ESCO joint venture partner selected through competitive dialogue tendering	30 Nov 2007 (M6)	Amended based on revision to Annex I	
2D2	Contract agreed between ESCO, electricity grid supplier, Xerox and its electricity supplier	29 Feb 2008 (M9)		

2D2	Planning application approved by LCC	31 July 2008 (M14)	30 Sept 2009 (M28)	ESCO
2D2	Wind turbine delivered, erected and connected to Xerox	31 Oct 2008 (M17)	Amended and pushed out to Month 40	
2D2	Wind turbine operating and supplying electricity to Xerox	30 Nov 2008 (M18)		
2D3	IDA to select lighting columns units most appropriate to requirements	31 Aug 2007 (M3)	Wording amended 31 Aug 2008 (M15)	IDA
2D3	Lighting columns installed within business park	31 May 2008 (M12)	31 May 2009 (M24)	IDA
2D3	Report on operation and effect of RE lights following winter period	30 Nov 2008 (M18)	30 Nov 2009 (M30)	IDA
2D4	Houses identified with owners consent	30 June 2007 (M1)	30 June 2007 (M1)	DTC
2D4	Insulation upgrades complete	30 Nov 2007 (M6)	30 Nov 2007 (M6)	DTC
2D4	Heating systems installed (condensing gas)	31 May 2008 (M12)	31 May 2008 (M12)	DTC
2D4	Publish first winter assessment	30 Nov 2008 (M18)	30 Nov 2008 (M18)	DTC
2D5	Technical specification complete and tender issued for DKIT	31 July 2007 (M2)	31 May 2008 (M12)	DKIT
2D5	Technical specification completed for O'Fiach	31 Jan 2008 (M8)	30 April 2007	DKIR
2D5	Work complete on DKIT buildings and commences on O'Fiach college	31 May 2008 (M12)	Work complete on O'Fiach and delayed for DKIT. DKIT – due to be completed M24	
2D5	Energy management systems in hotel and student accommodation	31 May 2008 (M12)	31 May 2008 (M12)	
2D5	Work complete on O'Fiach	30 Nov 2008 (M18)	31 Aug 2007 (M2)	DKIT
2D6	Construction of houses completed	31 Jan 2008 (M8)	31 Jan 2008 (M8)	SEI
2D6	Houses occupied by new owners	31 May 2008 (M12)	31 May 2008 (M12)	SEI
2D6	Economic survey complete to determine purchasing patterns for eco houses	30 Sept 2008 (M16)	31 May 2008 (M24)	SEI
2D7	Office blocks commence construction	30 Sept 2007 (M4)	31 Nov 2009 (M18)	IDA
2D8	Completion of study design report	30 Nov 2007 (M6)	30 Nov 2007 (M6)	ESB
2D8	Selection of contractor for meter installation	29 Feb 2008 (M9)	29 Feb 2008 (M9)	ESB
2D8	Meters installed	31 May 2008 (M12)	29 Feb 2008 (M9)	ESB
2D8	Completion of meter testing and customer training	30 Nov 2008 (M18)	30 Nov 2008 (M18)	ESB

2M1d	Construction site defined, operator organisation established, interfaces defined	30 Nov 2007 (M6)	30 Nov 2007 (M6)	MOD
2M1d	Economical viability proved, construction procedures defined…	31 May 2008 (M12)	31 May 2008 (M12)	MOD
2M1d	Approval by the Community and regional authorities	30 Nov 2008 (M18)	30 Nov 2008 (M18)	MOD
2M2	Construction site defined, operator organisation established, interfaces defined	31 May 2008 (M12)	31 May 2008 (M12)	MOD
2M2	Economical viability proved, construction procedures defined, principal design and schedule prepared	31 Aug 2008 (M15)	31 Aug 2008 (M15)	MOD
2M2	Approval by communities and other authorise confirmed	30 Nov 2008 (M18)	30 Nov 2008 (M18)	MOD
2M2	Final design of solar roof programme Modling	29 Feb 2008 (M9)	29 Feb 2008 (M9)	MOD
2M2	Approval by the community and regional authorities	31 May 2008 (M12)	31 May 2008 (M12)	MOD
2M3	Construction site defined, operator organisation established, interfaces defined	30 Nov 2007 (M6)	31 May 2009 (M24)	TBB
2M3	Economical viability proved, construction procedures defined…	31 May 2008 (M12)	31 May 2009 (M24)	TBB
2M3	Approval by the Community and regional authorities	30 Nov 2008 (M18)	30 Nov 2009 (M30)	TBB
2M4d	Cluster analysis results of older buildings in Modling	31 Oct 2007 (M5)	30 Nov 2007 (M6)	MOD
2M4d	Simulation and evaluation of results	31 May 2008 (M12)	31 May 2008 (M12)	MOD
2M4d	Tendering, contracting and scheduling finalised	30 Nov 2008 (M18)	30 Nov 2008 (M18)	MOD
2M5	Analysis, simulation and evaluation of results	31 May 2008 (M12)	31 May 2008 (M12)	SOL4
2M5	Tendering, contracting and scheduling finalised	30 Nov 2008 (M18)	30 Nov 2008 (M18)	SOL4
2M6d	Design of two pilot systems	30 Nov 2008 (M18)	30 Nov 2008 (M18)	TBB
2N1	Connection to the grid of the new 750m2 PV plant delivering 65 MWh renewable electricity	31 May 2008 (M12)	31 May 2008 (M12)	NTEL
2N1	Connection to the grid of the 11kW extension of the sun tracking PV plant delivering 14 MWh renewable electricity	31 May 2008 (M12)	30 Nov 2009 (M30)	NTEL

2N1	Report	30 Nov 2008 (M18)		
2N2	Connection to the grid of the new 15kVA turbine at the sewage plant delivering 57 MWh/yr renewable electricity	31 May 2008 (M12)	31 May 2009 (M24)	NTEL
2N2	End of the first step retrofitting of the hydro complex of La Serrière with a supplementary renewable electricity production of 0.5 GWh/yr	30 Nov 2008 (M18)	30 Nov 2009 (M30)	NTEL
2N2	Report	30 Nov 2008 (M18)	30 Nov 2009 (M30)	NTEL
2N3	Completion of the energy savings in district heating	30 Nov 2008 (M18)	30 Nov 2008 (M18)	NE
2N3	Report	30 Nov 2008 (M18)	30 Nov 2008 (M18)	NE
2N4	Completion of retrofitting of La Saars,	31 May 2008 (M12)	30 Sept 2008 (M16)	NE
2N4	Report	30 Nov 2008 (M18)	30 Nov 2008 (M18)	NE
2N5	Detailed project plan for the retrofitting with an energy demand reduction of 200 MWh/yr	31 May 2008 (M12)	30 Nov 2008 (M18)	NE
2N6	Energy savings in the swimming pool reaching 850 MWh/yr	30 Nov 2008 (M18)	30 Nov 2008 (M18)	NTEL
2N6	Report	30 Nov 2008 (M18)	30 Nov 2008 (M18)	NTEL
2N7	A report on the energy diagnostics of the hospital… reduction of 10% of energy consumption…	30 Nov 2008 (M18)	30 Nov 2008 (M18)	NE
2N8	Completion of the energy savings in the new buildings compared with national regulations	30 Nov 2008 (M18)	30 Nov 2009 (M30)	NE
2N8	Report	30 Nov 2008 (M18)	30 Nov 2009 (M30)	BAU
2N9	List of buildings to optimise	30 Nov 2008 (M18)	30 Nov 2008 (M18)	PLAN
3.1	First schedule of training	31 May 2008 (M12)	30 Nov 2009 (M30)	SEI
3.1	First two courses delivered	30 Nov 2008 (M18)	30 Nov 2008 (M18)	SEI
4.1	Project Board and CSG established	31 July 2007 (M2)	31 July 2007 (M2)	SEI
4.2	Project Intranet operational with information exchange between partners	30 Nov 2007 (M6)	30 Nov 2007 (M6)	SEI

SECTION 1: CONTRIBUTION OF EACH COMMUNITY

DUNDALK:

Dundalk has had a successful year in which good progress has been made to meet the community targets as outlined in Annex I. This progress could not have been achieved without the commitment and assistance of the Dundalk partners. SEI worked with all local and national partners to create a document called the Dundalk 2020 Charter, which sets out a vision *…to stimulate a national move towards sustainable energy practice through demonstration in an exemplar community*. This Charter was signed by 20 signatories at a public ceremony and each signatory committed to working with the Dundalk community *to demonstrate how a community can move to a more sustainable pattern of energy supply and use.*

Dundalk is fortunate as signatories to the Charter are a mixture of public and private organisations who perceive the HOLISTIC project as a platform of common interest. The commitment from both partners and stakeholders is further captured in the project management structure which has been implemented in Dundalk. The project structure is aligned to the Dundalk work packages and is outlined in *figure 1* below:

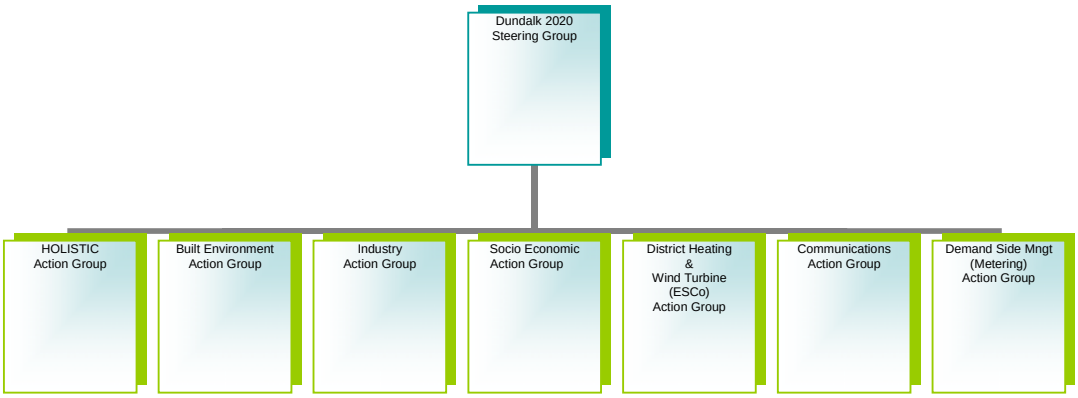


Figure 1: *Dundalk Community Structure*

The Dundalk 2020 Steering Group (otherwise known as the Community Steering Group) meets on a bimonthly basis. All the Action Groups are task orientated and generally meet on a monthly basis. For all action groups meetings minutes are shared with the overall Steering Group in order that they have full details of progress.

Since the start of the contract the primary focus of the Dundalk community has been to drive the demonstration work packages forward. On this front there has been success for work packages 2D4, 2D5, 2D6 and 2D8. For example, in work package 2D5 work was completed ahead of schedule on O'Fiach secondary school, and now the school is 60% more energy efficient. Feedback received from the school authorities indicates the school is seen in a more favourable light by students, staff and the local community. For the same work package, 2D5, it was necessary to introduce the HSE as a partner to the contract as they were undertaking the work on the hospital ahead of schedule. Approximately 46% of the building area to be retrofitted has been completed, and over 80% of the new build as identified in the BEST sheets has been completed.

The work package focusing on demand side management, 2D8, has also moved forward ahead of schedule. Over 200 15-minute interval meters have been installed, and the partners to this work package are now working with the residents to implement behavioural change.

Good progress has been made on most of the other work packages. The ESCO Action Group has given a considerable portion of time to work package 2D1 District Heating.

The primary focus of this time has been given to legal considerations, as the ESCO is to be contracted under the Competitive Dialogue Procedure. This is a complicated public procurement procedure but work is progressing in a thorough manner and it is anticipated that the final Tender will be issued in autumn 2008.

As outlined in this Activity Report good progress has also been made on work package 2D3 renewable street lighting but the deliverables were not achieved in this period. The renewable street lighting is to be erected in a public place and so there is a requirement that the lighting can be guaranteed to ensure public safety. However the initial trial on the street lights could not guarantee the required level of security of the supply of lighting, and for this reason it has been decided to make this work package more robust by field testing several types/ arrangements of street lights to find a solution which can guarantee security of supply.

This is a complex project, and perhaps more complex for the Dundalk community as they are increasing energy efficiency and the penetration of renewables from a very low baseline to a requirement that is higher than the national requirement and at an accelerated pace. There is a delay for work package 2D2 wind turbine, as a site has not been agreed – this is a common challenge for many of the CONCERTO communities. However the approach taken to resolve this issue is practical and the full resources of the Dundalk Community are being used to overcome it. Another delay to the Dundalk project has been in work package 2D7, building of new office blocks, as Ireland is currently experiencing an economic downturn which results in less demand for office space. Overall, the commitment of the Dundalk community to drive this project forward is undimished.

A strong point for the Dundalk community in overcoming delays is its ability to network and share information. This strength has ensured a good audience for dissemination and the audience of note is the Irish Government. The Department of Communications, Energy and Natural Resources (DCENR), the parent department of SEI, has taken a keen interest in the overall project with particular focus on demand side management (2D8). Indeed the Dundalk Community is creating many *firsts* for the energy sector in Ireland, for example:

- the competitive dialogue process and pursuant contract for district heating will be the first of its kind in Ireland
- the district heating system will be the largest ever installed in Ireland and the first of its kind to use renewable fuel source
- the installation of 200 interval meters in the domestic sector is the first of its kind in Ireland
- renewable energy street lights will be first of kind in Ireland
- the Dundalk 2020 Charter is the first public – private community based partnership committed to promoting sustainable energy and is a model for others to follow

MÖDLING:

Mödling has been active throughout the year on all of its work packages, both in the vertical work packages and the horizontal work packages where it leads (such as WP1.1). Several of Mödling's work packages have both RTD and demonstration elements and have been sub divided accordingly. The RTD parts have seen steady progress during the year, doing groundwork for the demonstration parts which are to follow

Mödling has successfully led the socio economic work (WP1.1) which conducted the first survey of public opinion that will form the baseline for further work during the project. The ground thermograph (WP1.5) will be a useful dissemination tool and assist in the identification of buildings most in need of refurbishment work (2M4). The research elements of the WPs 2M1, 2M4 and 2M6 have progressed, leading to good progress being made on all work packages.

The Solar Programme Mödling has been developed (2M2) and now awaits formal adoption by the Town Council.

The interaction with Aachen has progressed well (WP 5.3) and the conference in Aachen will be delivered 18 months ahead of schedule.

Several WPs face delays, but none are yet threatened. Public objections to the biogas plant in WP 2M3 have meant that the work has been re-scheduled whilst a different technology and site are identified. Uncertainties about the new Austrian legislation on green electricity and buildings regulations have meant that both the building integrated PV (2M2) and new eco building (2M5) are temporarily `on hold` until the situation becomes clearer. Minor changes to some milestones have been made to synchronise the timetable of the WPs with the annual budget cycle of the Council.

The main achievements of Mödling during the period are:

- delivery of the first survey of public opinion
- the ground thermograph
- installation of the turbine in the drinking water system
- development of the Solar Programme Mödling
- advancing the Aachen conference

NEUCHÂTEL

Neuchâtel's actions in the field of energy have previously been recognised by the grant of the Gold European Energy Award and the first year of HOLISTIC has served to confirm their reputation as leaders in the promotion of renewable energy and energy efficiency. Good progress has been made on all the demonstration work packages, as well as the RTD work packages for which Neuchâte is responsible.

The community is already seeing the benefit of some of the work, such as the PV array on the roof of the new stadium (2N1), the retrofit of the swimming pool (2N6) and new dwellings have been constructed (2N8). The aerial thermograph (1.5) is being used to identify buildings that can benefit from optimisation (2N9) and will be a powerful dissemination tool, allowing the public to be shown which buildings are less efficient.

The RTD WPs which are led by Swiss partners (WP 1.2 and 1.6) are also progressing well. The prototype of LESO SUNTool model is on track to ready for testing during the upcoming M13-30 period. Similarly, the heat control system will be ready for testing in the M13-30 period, with the development work running slightly ahead of schedule.

Neuchâte is the first community to have designed training courses and three were approved by the Project Board for delivery during M13-30.

The project has faced several threats during the year but all these have been addressed. Solutions have been found and although there are some minor delays to milestones, all the WPs remain on track to deliver their objectives in full.

The decision of the City to `privatise' its services department and set up a company (VITEOS) to provide services to the City, has disrupted work on several WPs. This major re-organisation has inevitably led to some delays in a number of projects, both inside and outside HOLISTIC. However the personnel of the new company is largely the same as the previous services department so there is no loss of knowledge and continuity is assured. Although some WPs (e.g. 2N2) have been slightly delayed by the disruption, others such as WP 2N4 are sufficiently ahead of schedule that milestones relating to the retrofit of the *Gibraltar* building are not at risk.

Other significant risks that threatened some of the WPs have now receded. Planning permission for the wind turbines in 2N1 appeared problematic at one stage but a recent decision of the Swiss Supreme Court means that this permission, although not yet guaranteed, should not become a major issue. Potential difficulties with financing the work in 2N5 on the Institute of Chemistry have been resolved.

The main achievements in Neuchâte during the first year of HOLISTIC have been:

- PV array on the roof of the new stadium
- The aerial thermograph, which will contribute to several other WPs
- The refurbished swimming pool
- New eco housing constructed and work on other new eco buildings commenced
- Threats to project identified and managed to avoid jeopardising the objectives of the WPs.

SECTION 2: WORK PACKAGE PROGRESS OF MONTH 0 TO MONTH 18

The “whole community” approach advocated in the HOLISTIC project inevitably requires a multiplicity of lines of action and sub-projects, which leads to a degree of complexity that is significant, even for an Integrated Project.

The work involved in the HOLISTIC project has been subdivided into 40 work packages. These are coded according to the following system. The first digit indicates the type of work package:

1 Research, technological development and innovation activities
2 Demonstration activities
3 Training activities
4 Management activities
5 Dissemination activities

The final digit is the number of the WP in a particular category. In the demonstration activities in particular, WPs also include a D, M or N as appropriate to indicate the community where the demonstration is situated. This categorisation is not an absolute one and some work packages contain elements that fall under another category, e.g. some of the demonstration work packages include a research element. In these cases the WPs are split and a suffix r or d is added.

Although superficially complex, this approach has ensured that two sometimes conflicting objectives can be realised. The community based actions (mainly demonstration activities) can be regarded as applying the principle of subsidiarity, devolving as much responsibility as possible down to the local level. The responsibility for these work packages rests with individual communities, and so avoids a top heavy management structure in the project. The “inter–partner” actions (mainly RTD, training and management actions) have ensured there is a real collaboration and cooperation between the partners and a visible European added value.

Progress on these work packages is now described in more detail.

2.1 RTD / INNOVATION

WORK PACKAGE NAME: SOCIO ECONOMIC RESEARCH

WORK PACKAGE NUMBER: 1.1

WORK PACKAGE OBJECTIVES:

The objectives are:

- to identify the consequences of direct exposure to a major demonstration of sustainable energy technologies on the attitudes and behaviour of the public.
- to evaluate which measures taken within the CONCERTO Zones were most influential in changing attitudes and behaviour.

PROGRESS TOWARDS OBJECTIVES:

A Questionnaire was designed to gauge the public's attitude to renewable energy and energy efficiency measures and the extent to which they were prepared to take action. There was a common core for all three Communities, plus additional questions specific to each Community. This is presented as Deliverable 1.

The survey was completed with a representative sample of inhabitants in each Community to provide a baseline understanding of attitudes and barriers against which future survey results and the influence of HOLISTIC can be compared. The survey methodology and findings are collated in Deliverable 2 which includes:

- The chosen approach and particular background information of the CONCERTO Zones in Dundalk, Mödling and Neuchâtel.
- The overall analysis evaluating:
    - The societal background of the interviewees like age, gender, status, education, knowledge about the HOLISTIC project and others;
    - Public awareness and perception of climate change and related expected impact and responsibilities for/of the social actors;
    - Assessments on influences of energy efficiency measures regarding the provided services and its benefit;
    - Public perception and acceptance of renewable energy in terms of technology hit-lists and related Willingness To Pay and
    - Some crosscutting responses underpinning the analysis results above and showing regional as well as cultural particularities.
- The deriving of particular conclusions and actions recommended for each partner community and synergetic for the whole project.

The baseline survey of the public opinion will serve as a baseline for further socio-economic investigations and adapted awareness campaigns within the CONCERTO zones.

PARTNERS: The overall Work Package leader was FHWN who were also responsible for carrying out the work in Mödling. LCC supported by SEI were responsible for Dundalk, and ECO supported by PLAN in Neuchâtel.

DEVIATIONS FROM WORK PACKAGE:

It was proposed that the first survey would be undertaken after publicity and promotion of HOLISTIC within the Zones. However the work was carried out before such promotion

in order to provide baseline information, prior to influence from HOLISTIC. This will increase the usefulness of the Work Package, whilst having no impact on costs or schedule. The planned second and third surveys will clearly demonstrate the impact of HOLISTIC on inhabitants of the Zones.

The planned promotion initial awareness campaign has been completed and promotion will continue throughout the project.

DELIVERABLES ACHIEVED IN THE YEAR:

Deliverable 1: A Questionnaire to gauge public attitudes.

Due :month 4, Achieved: month 4

Deliverable 2: First survey of public opinion

Due :month 7, Achieved: month 7

MILESTONES ACHIEVED IN THE YEAR:

Month 4: Questionnaire designed

Month 7: First survey conducted, initial awareness campaign completed.

WORK PACKAGE NAME: MODELLING

WORK PACKAGE NUMBER: 1.2

WORK PACKAGE OBJECTIVES:

The objective of this work package is to develop, test and compare different modelling tools (two for energy, one for carbon) in the three Communities.

The objectives of this work package have been further defined for clarity:

1. To develop bespoke urban district energy planning software (LESO-SUNtool), considering the range of demand-side influences as well as potential energy conversion systems to meet these demands.
2. To develop a simplified carbon emissions model (DSEZ-EM) to assist the strategic environmental decision making of urban planners, particularly in respect of scope for mitigating or offsetting carbon emissions.
3. To apply the new software tools within case study districts, to determine their fitness for purpose as well as to refine them for more widespread application.

PROGRESS TOWARDS OBJECTIVES:

The presentation of progress below is in proportion with the resource allocated to each task, with the exception of the third objective (as outlined above) in which it is too soon in the project to have made much meaningful progress in software application and evaluation.

LESO-SUNTOOL: The development of the solver is proceeding according to schedule; it was initially anticipated that this project would benefit from the availability of source code from its predecessor SUNtool. Unfortunately this has not been the case, so that software development has started entirely from scratch. This is a disadvantage in the sense that it has not been possible to reuse some useful work completed in SUNtool, but also an advantage in that EPFL are able to independently develop the software with a far clearer vision of what is required and how to approach it. To this end, good progress has been made both in energy modelling (the solver) and in the development of the human computer interface to this solver.

Solver: The already established structure of the C++ solver is shown schematically in Figure 2. At the core is a simplified dynamic thermal model which is based on analogy with an electrical network. Results from this model, which can simultaneously solve for the heat flows within a building consisting of an arbitrary number of zones, compare well with those of the EC reference dynamic simulation program ESP-r[1].

This thermal model is coupled with a family of plant and equipment models. In this there are two categories of model. Those which translate space conditioning demands into the energy that is required to be delivered to meet these demands; in particular due to the psychrometric processes that take place in air-handling plant (in the case of air-conditioned buildings). The other category related to the energy conversion system plant that meets these demands. At present these include:

- Boilers and co-generation plant
- Heat pumps
- Solar collectors (thermal and photovoltaic)

[1] ESP-r is a general purpose, multi domain building thermal, interzone air flow, intra zone air movement, HVAC systems and electrical power flow-simulation environment. It was developed by University of Strathclyde, Glasgow, UK

- Wind turbines

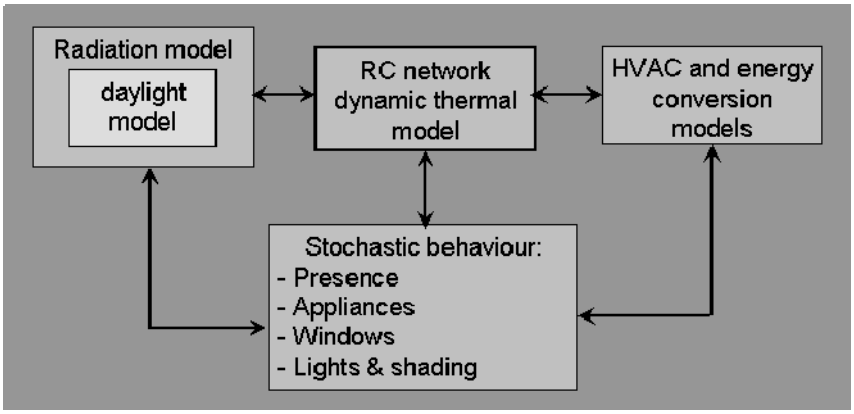


***Figure 2**: LESO-SUNtool solver structure*

These models will be connected with a family of radiation models for shortwave, longwave external surface exchanges and visible light transmission through façade openings. At the time of writing a model for predicting external surface shortwave exchange has been developed, but further work is required to prove the validity of this model as well as to model exchanges in the visible and longwave parts of the electromagnetic spectrum.

The fourth category of model relates to the modelling of occupants' presence and their interactions with windows, lights, blinds and water and electrical appliances. Work so far has concentrated on three fronts:

- Analysis of existing longitudinal questionnaire data from a previous project to develop initial (logistic regression) models for window and door opening, use of blinds etc. The purpose here being both to implement first approximation models as well as to stimulate ideas or more complete models.
- Installation of additional sensors and acquisition of detailed time-series data from the LESO (Solar Energy and Building Physics Laboratory) experimental building. Design of experiments for data acquisition within other buildings, both residential and non-residential. This data acquisition to support development of models which are both detailed and general in nature.
- Initial development of a comprehensive prototype window opening model.

Further work in this category will focus on the development and integration of the proposed models, their coupling with an existing LESO model for predicting occupants' presence and the integration of these models with the solver.

Interface: An initial skeleton of a human-computer-interface to LESO-SUNtool has been developed (Figure 3). At present this supports the user to sketch 2D polygons of building plans; to copy them, mirror them and rotate and delete them; to dimension them; to manipulate the view of the scene; to select them for (later) attribution. Some progress has also been made with the specification and editing of databases of default characteristics for different building types. Further work will focus on 3D extrusion of outline polygons and their manipulation to create realistic 3D building forms. For example in which building outlines are non-uniformly extruded in the third dimension (e.g. one part has two floors and another three) and in which they are topped by flat or profiled roofs. Work will then progress on developing the procedures to attribute buildings in terms of occupancy and constructional characteristics and building-embedded or district energy centres, as well as the parsing of results to the solver and the analysis of simulation results.

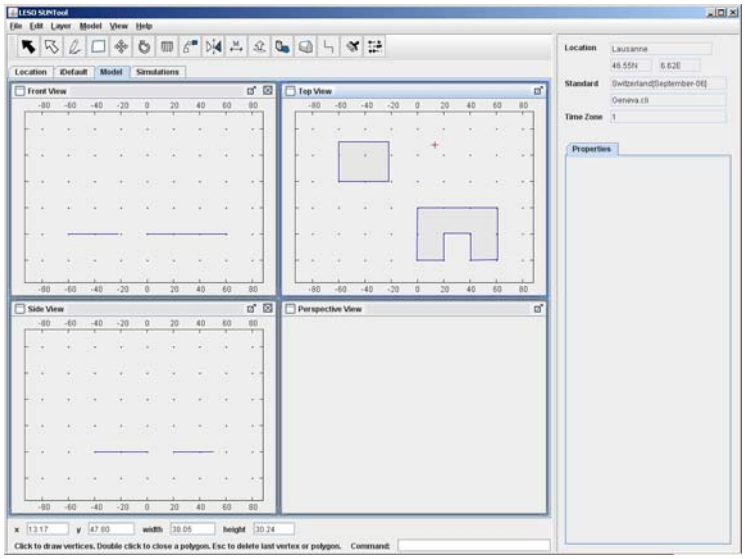


Figure 3: *Human-computer-interface to LESO-SUNtool*

Data collection to support stochastic model development, software calibration and software validation is under way, in collaboration with PLANAIR and the municipality of Neuchâtel.

DSEZ-EM: A basic prototype of this simplified emissions model has been prepared and the Dundalk Sustainable Energy Zone (DSEZ) will be used as a test case for the Model. The Emissions Model will be used as an illustrative planning tool to mitigate and reduce green house gas and energy use in urban zones that contain various property types such as residential, commercial, educational, health and green areas. Given a set of benchmark data for a particular category of proposed building, or using measured energy use data for an existing building, the total building energy demands of a site can be calculated. In the case of renewable source of energy supply these may then be reduced to total non-renewable energy needs for heating and electricity. Given a CO_2 conversion factor ($kgCO_2$,eq/kWh) these may then be converted into total equivalent CO_2 emissions. Based on estimations of journey distances by mode of transport for the population associated with a given site, the corresponding transport-related equivalent CO_2 emissions can also be estimated. Strategies for reducing these total site emissions may then be tested, such as:

- Substituting non-renewable with renewable energy sources.
- Changes in modes of transport.
- Planting of vegetation to sequester CO_2.

Organic waste is also accounted for, so that strategies for recycling and reusing bio-degradable (and thereby emissions producing) waste products can be tested.

The carbon dynamics of an urban zone depends on many factors, and consequently significant effort, to date, has concentrated on collation of reference data sets to include emission factors and/or methods to estimate emissions in the areas of:

- Energy Use (including renewables) – emission factor data sets is nearing completion
- Transport - emission factor data sets is nearing completion

- Carbon Sequestration (Land Use in settlements) - carbon sequestration data is sparse, variable and region specific. Information which is factored into the model include – green areas, vegetation type (including energy crops), soil type and land use.
- Waste Streams - data still to be expanded

The work flow of the DSEZ-EM can be characterised as follows:

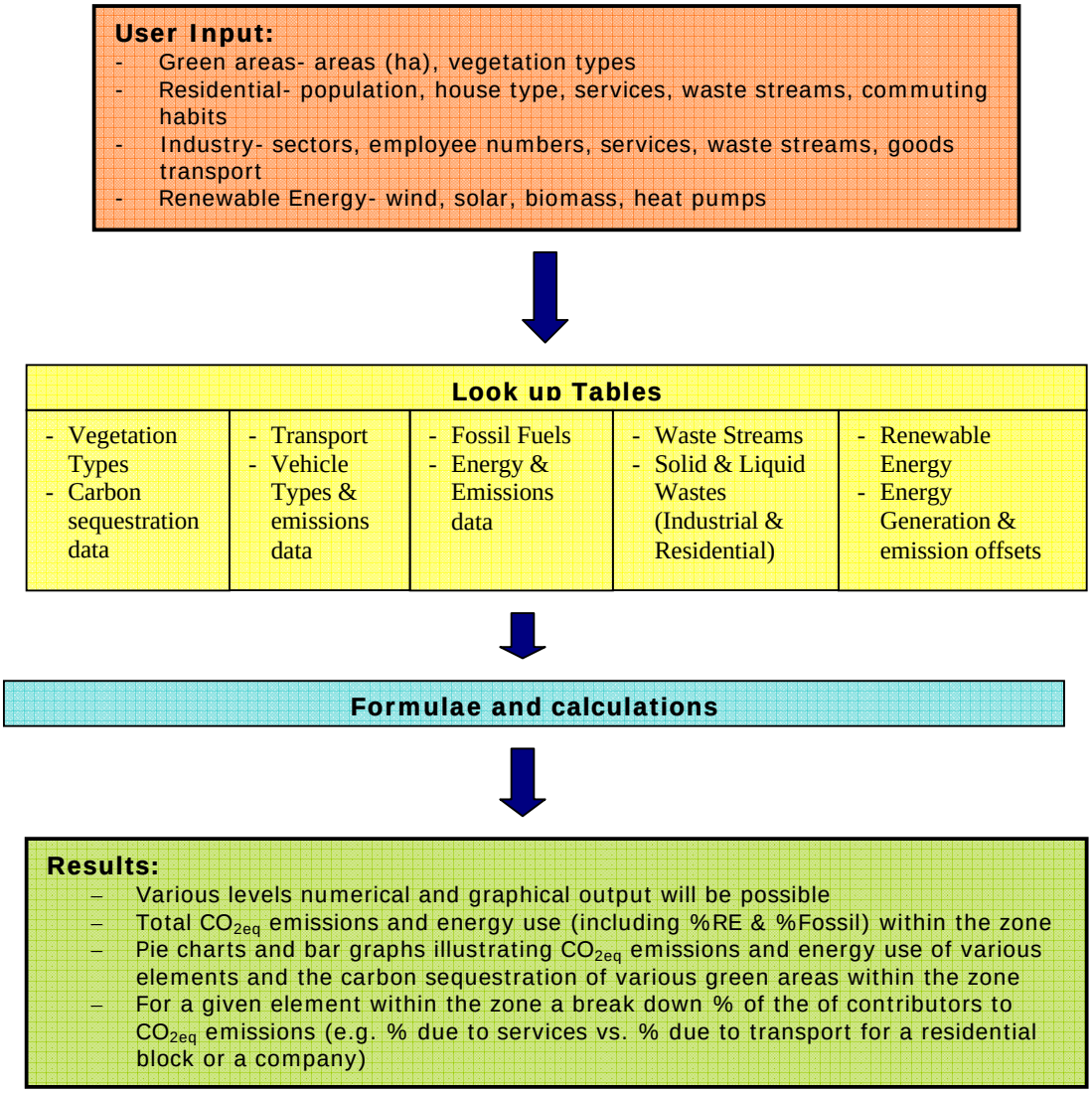


Figure 4: *Work Flow diagram for DSEZ-EM*

It is intended that when the excel model is finalised that a suitable web based user-friendly interface will be designed to allow for broad scale ease of use, as outlined in figure 5.

Figure 5: *Screenshot of the DSEZ-EM*

It has been tested on part of the industrial zone in Dundalk and is now being populated with reference data with much of the effort focusing on reviewing literature and building up more comprehensive reference data sets and methodologies to calculate CO2eq emissions. After which expansion and application of the model to the whole zone in Dundalk will take place. Data was collected for two large industries located in the Dundalk SEZ, and the following graph represents some initial finding.

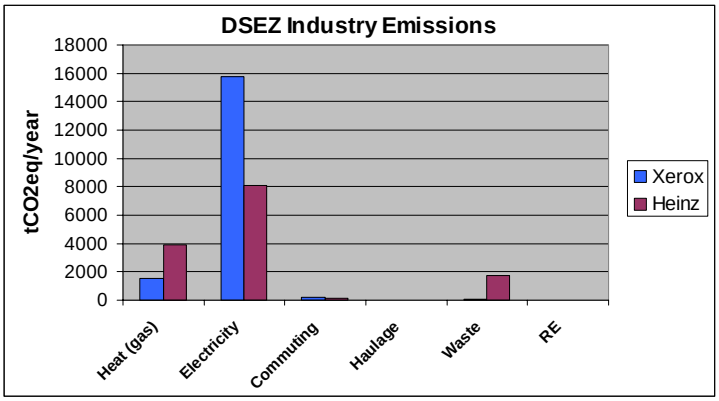


Figure 6: *Results from Dundalk SEZ*

The focus from now on will be on further development of the model, particularly regarding the inclusion of emissions data, and application to the whole Dundalk SEZ.

On the 28th November 2007 all partners involved in this work package met in Neuchatel (see photo below). At this time TBB presented a comparative analysis on currently available industrial tools, which may serve as a mature reference for this work package. The tools presented included the Energy Management Systems DEMS (Siemens), EC-REP (oekostrom) and EMS (ennovatis).

Figure 7: *Photo of representatives attending modelling meeting in Neuchatel, November 2007.*

To summarise, the progress made to date on both modelling tools is significant, and in this first period of the HOLISTIC project much effort has been given to data collection and verification.

PARTNERS: The Work Package Leader, EPFL, has developed the LESO-SUNtool and PLAN has started the process of data acquisition to assist with the application of LESO-SUNtool to Neuchâtel. In parallel DKIT acquired much of the data to calibrate their DSEZ-EM to Dundalk. TBB and MATT have supported the Work Package Leader where necessary.

DEVIATIONS FROM WORK PACKAGE:

SUNtool: After a slow start due to delays in initial staff recruitment, progress in software development was accelerated by engaging additional temporary staff, so that work is now proceeding according to schedule. It is worth noting that the software under development will be called LESO-SUNtool, rather than SUNtool. When complete this software shall be distributed as open source. This change will be reflected in the contract amendment.

DELIVERABLES ACHIEVED IN THE YEAR:

No deliverables were due between months 0 to month 12.

MILESTONES ACHIEVED IN THE YEAR:

The first milestone for this work package was in month 6 to test the emissions model on the industrial part of the Dundalk SEZ. Confirmation that this work was completed was submitted to the Coordinator, and full details of the milestone will be incorporated into the report for Deliverable # 4 which is due in month 18.

WORK PACKAGE NAME: EVALUATION OF HOLISTIC ACTIONS

WORK PACKAGE NUMBER: 1.3

WORK PACKAGE OBJECTIVES:

The object is to evaluate the effectiveness of different methods of managing the energy system within the communities.

PROGRESS TOWARDS OBJECTIVES:

Although the work plan foresees a start in Month 36 some preparatory work has been commenced already:

- By exchanging approaches and methodologies with the CONCERTO Plus team and
- By learning in particular how to use the already established database of CONCERTO Plus.

The intention is to use the "Guidelines for monitoring and impact assessment for CONCERTO II communities" as an aid in achieving the objectives of this work Package.

PARTNERS: The work package leader is TBB and contributions will be required from SOL4, PLAN and SEI.

DEVIATIONS FROM WORK PACKAGE:

None.

DELIVERABLES ACHIEVED IN THE YEAR:

None due.

MILESTONES ACHIEVED IN THE YEAR:

None due.

WORK PACKAGE NAME: POLICY ANALYSIS

WORK PACKAGE NUMBER: 1.4

WORK PACKAGE OBJECTIVES:

- To gain a better understanding of the key elements of the framework conditions leading to high energy performance
- To provide comparisons between the communities
- To provide an evaluation of the effectiveness of several types of policy and other measures

PROGRESS TOWARDS OBJECTIVES:

Collectively work began on this work package via a conference call (14th November 2007) for all partners involved. Prior to the conference call a questionnaire was developed, which covers the different level of regulations that can affect the energy consumption in each community. The questionnaire comprises of the following sections:

(a) Regulations and standards based on 2007 data

(b) Existing instruments and programmes,

(c) Organisation,

(d) Key statistical data with 2006 as the reference year

This questionnaire has been discussed among partners involved in the work package as well as with the authorities. Through discussion with the work package partners it was agreed that the questionnaire will assist in collating information on all applicable national, regional and local regulations that can affect energy consumption. The questionnaire has been completed by all partners and collected by the work package leader. A report is under preparation to summarize the main results collected.

Work to date has demonstrated the complexities of energy legislation in Europe and Switzerland. In Ireland and the UK the system of governance is through central government and all European Directives are transposed through national statutes. In Austria and Switzerland the governing system is divided between national, regional and local – even though national regulations will have precedence local regulations can be set to a higher standard.

PARTNERS: The overall Work Package leader is PLAN who was also responsible for carrying out the work in Neuchâtel. SEI is responsible for Dundalk, and FHWN has responsibility for Mödling. NEW has responsibility for Northern Ireland, whilst MATT has responsibility for Italy.

DEVIATIONS FROM WORK PACKAGE:

Deliverable 5 is due in month 18 and it was proposed to have a “validated list of regulations etc.” Through completion of the questionnaire as outlined above, a list of regulations is available but it is agreed by the HOLISTIC Project Board that this deliverable can be made more robust, and deliver something better than planned for deliverable 5. This revised deliverable is inserted in Annex I, and will be delivered in month 18, which is on schedule.

DELIVERABLES ACHIEVED IN THE YEAR:

None due

MILESTONES ACHIEVED IN THE YEAR:

None due

WORK PACKAGE NAME: THERMOGRAPHY

WORK PACKAGE NUMBER: 1.5

WORK PACKAGE OBJECTIVES:
This work package aims at acquiring detailed information on the building quality inside the CONCERO zones by aerial thermography, with the main goals to sensitise the population, the private owners and the local authorities to the problems of energy in buildings.

PROGRESS TOWARDS OBJECTIVES:
This vertical work package only involves two communities, namely Neuchâtel and Mödling.

Neuchâtel: The Thermography in Neuchâtel took place on February 11 and 12. A helicopter with specific equipment carried out this work. The data collected during the flight are under process of analysis. Results will be presented to the inhabitants of the Holistic zone in June. The example below is a picture taken which presents the sewage plan. Information on this work package was presented in local media, and this stimulated interest from building owners to access data. This is an important step for Neuchatel as it will allow other work packages (1.2; 1.6, 2.N9; 5.4) be expanded in more detail. For example buildings identified from aerial thermography will be eligible for optimisation under WP 2N9.

***Figure 8**: Thermograph of sewage treatment plant in Neuchâtel*

Mödling: Thermal images of buildings to be retrofitted have been taken at ground level using a mobile thermal imager. The thermographs and analysis functions of each building have been documented in structured templates; this allows for mapping the weak points of the building and for deriving the necessary measures to rectify under Work Package 2M4 – Improved Energy Efficiency in Buildings.

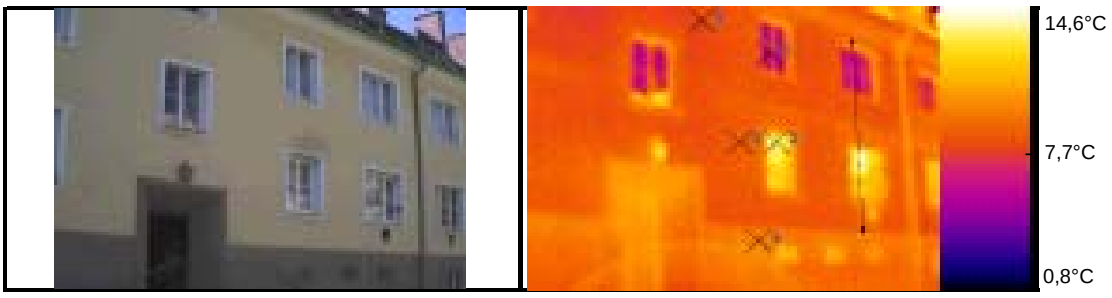


***Figure 9:** Thermography of buildings in Mödling that are to be retrofitted.*

DEVIATIONS FROM WORK PACKAGE:
There is no deviation from the work package with respect to the Neuchâtel community.

Mödling used ground instead of aerial thermograph as the public buildings for retrofitting were previously identified. Hence, these thermographs will be used as an in-depth analysis tool to map the weakest points of the building and to derive the necessary measures of the identified hot spots elaborated in WP2M4. This deviation was a prudent use of resources within this project as the information and results gathered are more valuable to the community of Mödling. This deviation is requested via contract amendment.

PARTNERS: The overall Work Package leader is PLAN who was also responsible for carrying out the work in Neuchâtel with the support of NTEL. SOL4 is responsible for Mödling with the support of MDK.

DELIVERABLES ACHIEVED IN THE YEAR:
Deliverable 6 “The Thermograph” has been submitted to the Coordinator
Due month 12, taken month 9

MILESTONES ACHIEVED IN THE YEAR:

M12 Aerial thermography taken - complete

WORK PACKAGE NAME: SMART HEATING CONTROL

WORK PACKAGE NUMBER: 1.6

WORK PACKAGE OBJECTIVES:
The objectives of the work package are to complete development of a new heating control tool, validation in the 3 communities and defining a route for commercialisation.

PROGRESS TOWARDS OBJECTIVES:
Adhoco has developed a smart home solution for "intelligent living" to bring better comfort, higher security, lower energy consumption and attractive support features to a home. A communication system using sensors and actuators is by wireless, encrypted radio communication. All the information of all the sensors is available for an optimized and coordinated control of home appliances such as lights, blinds, windows, heating radiators etc.

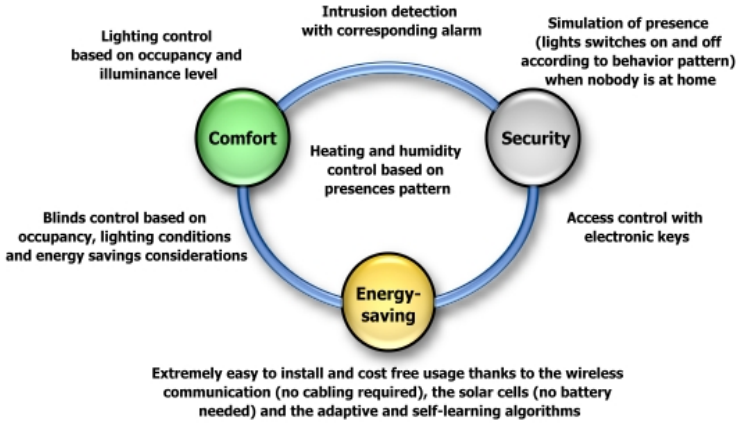


Figure 10: *Function overview of home automation system*

This system can be defined as Adaptive Home Automation (AHA), and this type of system learns from the inhabitants' behavior and uses these patterns to adapt the decision and control rules. This learning feature makes automation very well accepted by users who would otherwise refuse to use it.

Under this work package Adhoco are working with CSEM to develop a new heating control system to enhance the energy savings potential of this tool. Work is under process and according to schedule:

1. the hardware has been finalized (for the electronic part as well as the housing)
2. the optimisation wireless communication has been conducted

The specifications of the control device for ground heating have been determined. Then, a feasibility study was conducted with a rapid prototyping. It has shown that the way of doing was correct and that it was possible to control several valves with one module.

CSEM has evaluated and proposed improvements to the Adhoco communication system. The main outcomes of the CSEM study were concerning the improvement of the antenna length of some Adhoco products and the advice of putting an external antenna for the newly developed product. Adhoco has taken into considerations these improvements and implemented them for the next produced hardware.

The hardware developed in the project consists of an electronic board with a wireless (ZigBee) chip, and six on/off relays. It means that with one module, six under-floor heating valves may be controlled (see Figure 11). Each of the six outputs could be individually overridden with a manual switch with three positions: on/automatic/off.

Figure 11: *Newly developed under-floor heating valve controller*

When a valve is in the "automatic" mode, it is wirelessly controlled by the Adhoco central control unit (see Figure 12). One central control unit could control individually up to 16 different heating zones.

Figure 12: *Adhoco.H1 the central control unit*

Now, the last step remaining to complete this work package is to run simulations and check the correct operation of the smart heating controller.

PARTNERS: The work package leader is ADH with support from CSEM and input from TBB and LCC.

DEVIATIONS FROM WORK PACKAGE:

No deviation.

DELIVERABLES ACHIEVED IN THE YEAR:

None due – due in month 18

MILESTONES ACHIEVED IN THE YEAR:

No milestones due in first 12 months - not due until month 18

WORK PACKAGE NAME: DUNDALK: ELECTRICITY STORAGE

WORK PACKAGE NUMBER: 1.7

WORK PACKAGE OBJECTIVES:
The overall objective is to investigate the usefulness of electricity storage as an energy management element in the Dundalk 2020 project, particularly in conjunction with the DKIT wind turbine.

PROGRESS TOWARDS OBJECTIVES:
This project investigates the economic benefit of electricity storage at DKIT with and without wind auto production and explores control approaches to maximize the economic benefit storage. [2]

This work package had two deliverables associated with it which are both related to the installation of a flow battery, but can be independently commented on.

ECONOMIC MODEL: Along with the electricity savings already being achieved by the wind turbine on its own there exists opportunities to reduce the DKIT electricity bills even further by adding electricity storage. During times when the demand at DKIT is low, usually at night and at weekends, when the cost of electricity is low any excess generated electricity by the wind turbine can be stored instead of being exported. The stored electricity can then be reused at times when electricity purchase prices are high and the power demand exceeds the power generated by the wind turbine. The power demand of DKIT at maximum load is approximately 1MW while the power demand at minimum load is approximately 200kW. Depending on the wind speed over a given year the wind turbine generates between 1.5 and 2 million kWh per year. DKIT consumes approximately 3 million kWh (2007) per year and the annual demand is increasing as new buildings come online.

An Excel spreadsheet model for economic validation of electricity storage in the form of flow batteries of various sizes and operating under the different scenarios has been developed. This model evaluates the economics of adding flow battery electricity storage at current and medium term capital costs using seasonal and time of day (SToD) electricity tariffs from the utility company, the Electricity Supply Board (ESB), for various battery sizes in rating, capacity and efficiency.

The Excel model consists of 25 sheets in total. Three of the work sheets are user inputs and two show the results. The data in the other 19 sheets internally generate and manipulate data based on the algorithms embedded in the model. A range of battery sizes were investigated for current battery capital costs and electricity prices and also for longer term electricity prices. The model takes as inputs annual half hourly energy generated by the wind turbine and annual half hourly load demand data for DKIT. It then uses seasonal and time of day (SToD) electricity tariffs for the 11kV network to evaluate annual cost savings for a given battery rating (kW), capacity (kWh) and efficiency as specified by the user. Options are available to give value to waste heat generated by the battery and ancillary services. Maximum Import Capacity (MIC) charges and penalties are included in the model. The model calculates payback times, NPV, and IRR for a given battery capital investment. Annual energy (kWh) flows e.g. amount of annual energy imported, exported, cycled through the battery and waste heat generated are also outputs of the model.

The user is given some ability to control how the battery operated based on electricity price. For example allow grid to charge the battery below a certain purchase price, allow

[2] DKIT installed a Vestas V52 wind turbine in 2005, and its generator is rated at 850kW maximum output.

discharging of battery above a certain purchase price, allow turbine only to charge battery when production exceeds demand. There is also an option to evaluate storage on its own at a site with no wind turbine. The results of the model can be viewed as a first pass evaluation of storage at a given site before detailed storage control is investigated.

Given that the nature of any model is theoretical, work on the excel model for evaluating the benefit of battery storage at DKIT has been completed. When a flow battery is installed on site it will be important to perform a comparative analysis on theory versus practice. DKIT has submitted deliverable 8 and this provides detailed analysis on the economic model. To summarise the economic model indicates that electricity storage can be economically beneficial to wind autoproducers.

The potential for electricity storage at other communities within HOLISTIC i.e. Neuchâtel and Mödling using the spreadsheet model will be evaluated. Final detailed report including user instructions for the spreadsheet model

METERING EQUIPMENT: A schematic overview of the end goal of the metering installation is show below in Figure 13. Currently the battery storage has not been installed

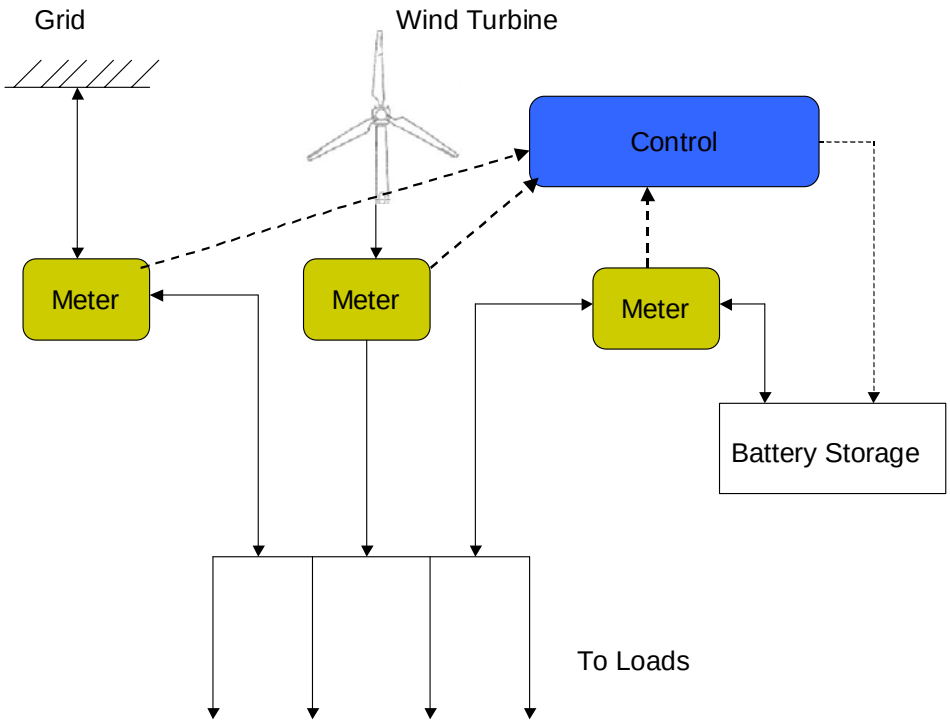


Figure 13: *Schematic overview of metering equipment at DKIT*

The metering equipment was installed from the 1st April 2008, and this is deliverable 9 of HOLISTIC. This system consists of real time data logging of power flows generated by the wind turbine, imported from the grid and exported to the grid using the ION meters and SCADA system. The logged data will give a complete and accurate picture of the electrical energy consumed by DKIT, the electricity being generated by the turbine and the electrical energy available for storage and how it varies with time. The system is currently being configured to log the data at 10 second sampling rate. Other parameters are also being logged such as voltage, current, frequency, reactive power. As a result this will enable the battery to be treated as a black box for various sizes in terms of

rating, capacity and efficiency, thus allowing a precise evaluation of a given battery size using the real time logged data.

The results can be compared with results that were initially projected by the excel model and the model will then be refined to match predictions with actual measurements.

PARTNERS: The work package leader for this is DKIT with support from ESB

DEVIATIONS FROM WORK PACKAGE:
As a flow battery has not yet been sourced the work to date is theoretical. However it was prudent and justified to proceed with the economic model based on theoretical data as this work also had to be completed. The next phase of research at Dundalk Institute of Technology will be investigating optimal control approaches on a real flow battery installation with autoproducers. The economic model will continue to expand to account for sensitivity to annual wind speed variation and load demand variation. Also the operation of the battery in response to electricity market spot prices as well as SToD prices will be included in the model.

DELIVERABLES ACHIEVED IN THE YEAR:
Deliverable 8a "A spreadsheet economic model for wind-plus-storage system and a report on the operating experience at DKIT, comparing it with model projections" – complete

Due month 8 – delivered month 8

Deliverable 9 "Installation of metering equipment" – complete

Due month 12 – delivered month 10

Note: Deliverable 8 has been completed in part, and has been identified as 8a, and when the flow battery is installed a comparative analysis will be completed (as outlined above) and this will be deliverable 8b.

MILESTONES ACHIEVED IN THE YEAR:
Three milestones were proposed for this period, and all three have been met.

- M8 – develop economic model – completed
- M10 – present first paper at conference – complete
- M12 – installation of metering equipment – completed.

WORK PACKAGE NAME: MONITORING AND ANALYSIS FOR CONCERTO PLUS

WORK PACKAGE NUMBER: 1.8

WORK PACKAGE OBJECTIVES:

To contribute to a joint programme of work to establish standards and methodologies for monitoring with other CONCERTO communities and participation in CONCERTO working groups.

PROGRESS TOWARDS OBJECTIVES:

This is an important but unconventional work package in the HOLISTIC Project. The premise of CONCERTO is to integrate many demonstration projects in a defined geographic area in order to leverage synergies where possible. This differs from other demonstration projects, commonly referred to as "light house" projects, as they tend to be stand-alone exemplars. Therefore it is important to have a measuring and monitoring integrated into the Project from the beginning as it will focus appropriate attention to this action, and this will provide data to indicate the success or otherwise of HOLISTIC.

This work package is under the umbrella of CONCERTO Plus. All data from CONCERTO I and II communities will be collated and validated; this will prove the success of the CONCERTO programme.

It is an unconventional as each community had factored in a measuring and monitoring work packages to meet community specific parameters, prior to knowledge of CONCERTO Plus. For that reason there is no exact definition as to what is required from each of the partners involved.

Since the start of the project work on this particular work package has been small and this is to be expected at the beginning of such a demonstration project. To date partners have been trained on the Technical Management Database (TMD) and have begun to enter data into this system. At the CONCERTO II launch in February 2008 there was a workshop on the TMD and representatives from all the communities attended this session.

PARTNERS: SEI is the work package leaders but equal effort will be given by PLAN and TBB.

DEVIATIONS FROM WORK PACKAGE:

No deviations from work package

DELIVERABLES ACHIEVED IN THE YEAR:

No deliverables defined in Annex I as approved by the Commission

MILESTONES ACHIEVED IN THE YEAR:

No milestones defined in Annex I as approved by the Commission

WORK PACKAGE NAME: MÖDLING: INSTALLATION OF RE SUPPLY AND STORAGE

WORK PACKAGE NUMBER: 2.M1R

WORK PACKAGE OBJECTIVES:
The objective is to construct a pump storage system for renewable energy which uses the drinking water system. (See also 2M1d)

PROGRESS TOWARDS OBJECTIVES:
This work package hopes to create a hybrid system which uses a combination of RES to create a "green" drinking water system for Mödling. The first part of the system is to create hydro storage, and this work package investigated the feasibility of this operating system. This work package is the research phase of 2M1d.

Energy flows for providing drinking water in Mödling have been investigated in detail and potential reductions of the energy consumption derived. This investigation involved analysis of the local conditions, operational data, water quality and required permits.

Further in-depth analysis has yielded a concept that improves the water hydraulic system whilst producing electricity at the same time. Inverse used pumps will be used as they are less costly in comparison with turbines and are also certified for drinking water systems. This system was approved for use by the water utility in Modling. Indeed research indicates it is easier and cheaper to find replacement components for inverse pumps when compared with turbines. The system is based on the principle that times of maximum water usage coincide with maximum demand for electricity, thereby green power and clean water at peak demand for both utilities.

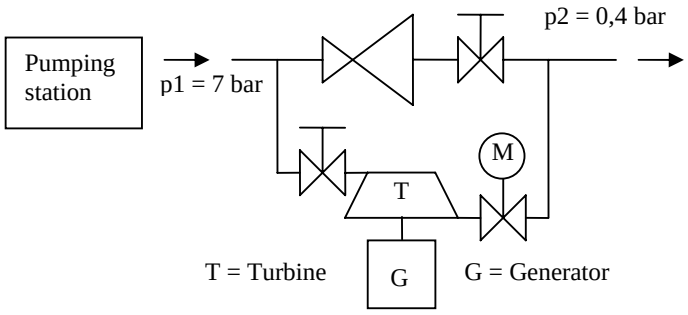


Figure 14: *Schematic of hydro system at drinking water plant*

The energy yield and efficiency has been calculated in comparison with turbines. Pumps have a lower degree of efficiency when compared to turbines (70% versus 80%) but the advantages outweigh this aspect, such as easy availability of spare parts and it suitable for use with drinking water. A turbine by comparison is much more expensive, spare parts are not readily available and it must be adapted for use with drinking water.

PARTNERS: This research work has been carried out by FHWN and TBB and is an essential precursor to Work package 2M1d.

DEVIATIONS FROM WORK PACKAGE:

None. The Work Package is on schedule and no unexpected challenges have been found during the work.

DELIVERABLES ACHIEVED IN THE YEAR:

Deliverable 24: Site defined, design completed and construction schedule.
Due: month 12, Achieved: month 12.

MILESTONES ACHIEVED IN THE YEAR:

Month 6: Construction site defined, operator organisation established, interfaces defined.

Month 12: Economic viability proved, construction procedures defined, principal design and schedule prepared.

All milestones have been achieved.

WORK PACKAGE NAME: MÖDLING: IMPROVED ENERGY EFFICIENCY IN BUILDINGS

WORK PACKAGE NUMBER: 2.M4R

WORK PACKAGE OBJECTIVES:

The objective is bringing the older buildings (i.e. > 30 years old) in Mödling up to the energy performance required in new buildings. Energy saving potentials will be identified according to the age of the buildings and required refurbishment identified. (See also 2M4d)

PROGRESS TOWARDS OBJECTIVES:

It is intended to cluster measures with the highest possible cost-benefit ratio for those buildings foreseen for retrofitting in Mödling's BEST sheets. Based on a thorough evaluation of the buildings SOL4 developed a methodology for the detailed technical-economic analysis of ways for energy improvement of those buildings, including calculation of costs and their return ability. Measures will be proposed being both economic and fulfilling the conditions set out in the BEST sheets of WP 2.M4d.

Based on the analysis by SOL4 buildings under review are divided into public and private buildings. However the same technical-economic analysis methodology was applied to both. Work will begin on the public buildings (primarily kindergartens) during summer 2008. The majority of the public buildings to be retrofitted initially are circa 1970's construction, and buildings of this era tend to be prefabricated panel construction. For maximum economic value the retrofit will require increased air tightness combined with a ventilation system will be able to reduce the high heat loss through ventilation. The replacement of the old and inefficient heating system will also contribute to reduce the final heating energy demand.

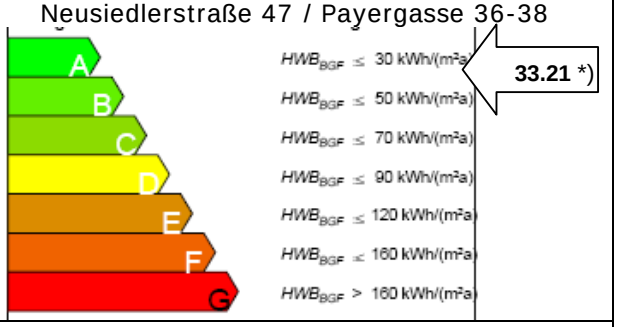
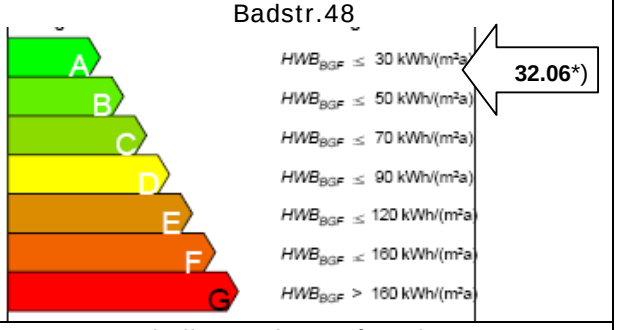
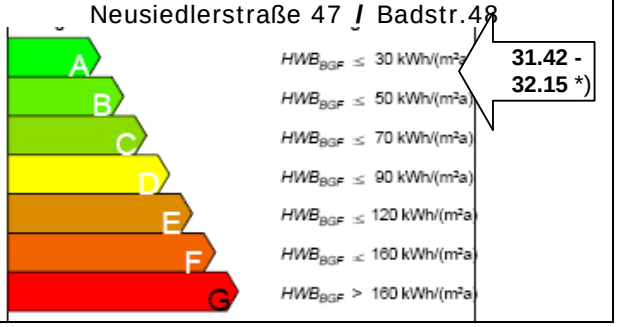
Status analysis	Kindergarten
HYRTLPARK, Hyrtlgasse 2 : The building is a classical slab-construction of the seventies with visible structural damages and sealing problems. Further in-depth analysis will be performed in order to derive concrete measures.	
JOSEF SCHÖFFEL, Untere Bachgasse 3: The Kindergarten „Josef Schöffel" consists of a new building and of rooms of the old school building. The old building is protected by cultural heritage and further in-depth analysis will be performed in order to identify and map particular measures.	

LERCHENGASSE, Lerchengasse 17: The Kindergarten "Lerchengasse" is a tumble-down building of the seventies with little insulation. Further in-depth analysis will be performed in order to derive concrete measures.	
SPECHTGASSE, Spechtgasse 41: The Kindergarten „Spechtgasse" is a classical, well-preserved building of the seventies designated for gross floor area extensions by the town council in 2008. Due to recognised complaints regarding the balance of the heating system together with the nearby school in-depth analysis are foreseen before the realisation start.	
HAYDNGASSE, Haydngasse 19-21: "Haydngasse" is one of the newest Kindergarten in Mödling designated for gross floor area extensions by the town council in 2008. The weak points of the building are related to the roof.	
LITSCHAUERHOF, Eisentorgasse 1: A detailed energy analysis for the Kindergarten "Litschauerhof" has been performed showing cost and benefits of different measures.	

Figure 15: *Images of some of the public buildings to be retrofitted.*

Some of the public buildings are protected monuments, and as such the retrofit must be sensitive to the architecture. It has been identified that the final heating energy demand can be reduced by as much as 60% if the correct systems are implemented. During the retrofit it is suggested to target heat losses through ventilation as it is the primary source of heat loss. The use of modern and efficient heating systems to replace old individual stoves will also improve the efficiency of the whole building.

The social housing association (Gemeinnützige Bau- und Wohnungsgenossenschaft für Mödling) will work with MOD on the retrofit of social housing as identified by SOL4 analysis. To ensure best economic-technical solution is utilised it has been recommended to upgrade the full thermal envelope of each building. In conjunction with the retrofit it is recommended that an awareness campaign be held in conjunction to educate the tenants on measures taken.

Status analysis	Social Housing
A detailed energy analysis of the multi-family houses with 12 apartments has been performed showing cost and benefits of different measures. The decision for renovation is given, and the realisation is ongoing.	Neusiedlerstraße 47 / Payergasse 36-38 
A detailed energy analysis of the multi-family houses with 2 steep tracks and 17 apartments has been performed showing cost and benefits of different measures. The decision for renovation is given, and the realisation is ongoing.	Badstr.48 
A detailed energy analysis of the multi-family houses with 3 steep tracks and 54 apartments has been performed showing cost and benefits of different measures. The decision for renovation is given, and the realisation is ongoing.	Neusiedlerstraße 47 / Badstr.48 

*) According to SAVE directive 93/76/EWG nach KOM (87) 401

***Figure 16**: Figure of estimated energy ratings for retrofitted social housing*

PARTNERS: SOL4 has carried out the work, supported by MDK.

DEVIATIONS FROM WORK PACKAGE:

None.

DELIVERABLES ACHIEVED IN THE YEAR:

Deliverable 28: Analysis report and potential plan for energy consumption reductions of 11,800 kWh/annum of older buildings in Mödling at project end.

Due: month 12, Achieved: month 12

MILESTONES ACHIEVED IN THE YEAR:

Month 5: Cluster analysis results of older buildings in Mödling - complete

Month 12: Simulation and evaluation of results

WORK PACKAGE NAME: MÖDLING: ELECTRICAL LOAD BALANCING

WORK PACKAGE NUMBER: 2.M6R

WORK PACKAGE OBJECTIVES:

The objective is to design pilot systems demonstrating how industrial demand, specifically for refrigeration of the warehouses of supermarket chains, can be used for load levelling. Existing compressor technologies will be used, but will be extended with latent cooling storage and with a novel control strategy. (See also 2M6d)

PROGRESS TOWARDS OBJECTIVES:

This is the initial design and feasibility stage of the subsequent demonstration work package.

In cooperation with SPAR Warenhandels AG the project SUPOSS carried out a comprehensive feasibility study regarding the integration of sustainable energy solutions in the frame of the Austrian RTD program "Energy systems of tomorrow". Today's energy supply systems of supermarkets are usually characterised by:

- 100% electricity from power station,
- 100% cooling energy from electrical compressor cooling machines and
- Almost 100% heating energy from fossil fuels (gas, oil), sometimes from district heating.

The in-depth analysis of energy flows was conducted in seven supermarkets of different sizes (3 Spar Markets, 3 Eurospar Markets, 1 Interspar Market). Three of the seven supermarkets showed similar load profiles and might be representative for the Spar or Eurospar markets in Mödling. The focus is set on the refrigeration technologies due to its need of 50 – 60 % of the total electricity demand in supermarkets.

In order to implement technological as well as organisational measures it is intended to create awareness for all relevant people working in selected supermarkets in order that they can understand their contribution and participation in energy reduction. For doing so a standard questionnaire has been developed for conducting face-to face interviews in autumn 2008; this questionnaire is incorporated into deliverable 30. The three target groups relevant for Mödling's demonstration systems are already identified and informed about it.

PARTNERS: The work has been carried out by TBB.

DEVIATIONS FROM WORK PACKAGE:

None.

DELIVERABLES ACHIEVED IN THE YEAR:

Deliverable 30: Analysis, simulation and evaluation of results.
Due: month 12, Achieved: month 12

MILESTONES ACHIEVED IN THE YEAR:

Month 12: Analysis, simulation and evaluation of results.

WORK PACKAGE NAME: MÖDLING: OPTIMISED ENERGY MANAGEMENT

WORK PACKAGE NUMBER: 2M7R

WORK PACKAGE OBJECTIVES:

The objectives of this work package are to perform quantitative and qualitative analysis of the performance of the demonstration site installations and to enable the cost-saving optimisation of power supply and demand in Mödling.

(It should be noted that the title of this Work package is misleading and should be taken as Optimised Energy Management. Impact Assessment is covered under Work Package 1.8)

PROGRESS TOWARDS OBJECTIVES:

The implementation of planning data into the existing energy system model is postponed till May 2008.

DEVIATIONS FROM WORK PACKAGE:

This work package is sequentially dependent on completion of work in other Modling work packages, and delays in these have had an impact on progressing work in this work package. There has been a delay in the publishing of the national Green Electricity Act for Austria and as a result this has created some delays for work package 2M2d “Solar Energy”. For work package 2M3d “Bioenergy CHP” there has been delays in site definition as there has been poor public perception of proposed location of Bioenergy CHP plant. Both of these work packages will provide information to be inputted into the software package to create scenarios

In addition a more appropriate software tool rather than DEMS as originally planned is under consideration.

Deliverable 32, which was due in month 12, is now set for month 20.

The final Deliverable in this Work Package, the final report considering both prediction and ex-post scenarios, is not due until month 56 and this is still expected to be achieved.

PARTNERS: The work has been carried out by TBB.

DELIVERABLES ACHIEVED IN THE YEAR:

None, deliverable 32 (due month 12), is delayed until month 20.

MILESTONES ACHIEVED IN THE YEAR:

None, delayed into 2008/9

WORK PACKAGE NAME: DUNDALK: ENERGY BUREAU

WORK PACKAGE NUMBER: 2D9

WORK PACKAGE OBJECTIVES:

The objective is to provide an energy management bureau for the Dundalk Sustainable Energy Zone, which will additionally be responsible for measuring and monitoring all the energy flows in the Zone to provide the data necessary for reporting on the HOLISTIC project.

PROGRESS TOWARDS OBJECTIVES:

It is the intention of this work package to create a community energy bureau, which will be the first of its kind in Ireland. The intention of the Energy Management Bureau is to encourage the development of energy management service companies to provide off-site energy control and management of groups of buildings, which lack the critical mass to provide the service from internal resources.

The purpose of the Bureau will be to

1. analyse the energy consumption of key sectors within the zone via a monitoring and targeting system
2. it will identify opportunities where savings can be made
3. with the assistance of interested parties it will implement change

It is envisaged that working as a collective and with a common focus the Dundalk SEZ will understand energy flows and be enabled to adopt best practice in energy management.

Even though the deliverables 21 and 22 are over-due much work has taken place to ensure this work package remains on target. There has been a delay in selecting the service provider as the organisations involved wanted to have a full understanding of how the Bureau would operate – as mentioned above this will be first of its kind in Ireland. SEI, as HOLISTIC Project Coordinator, has facilitated a number of meetings between local partners and agreement has been reached on the following:

- LCC will issue a tender for an Energy services company to provide bureau services to the zone,
- All of the interested organisations will meet collectively with the incumbent Energy Bureau on a monthly basis to understand work completed and planned.
- The proposed structure of the Steering Group is outlined in figure 17

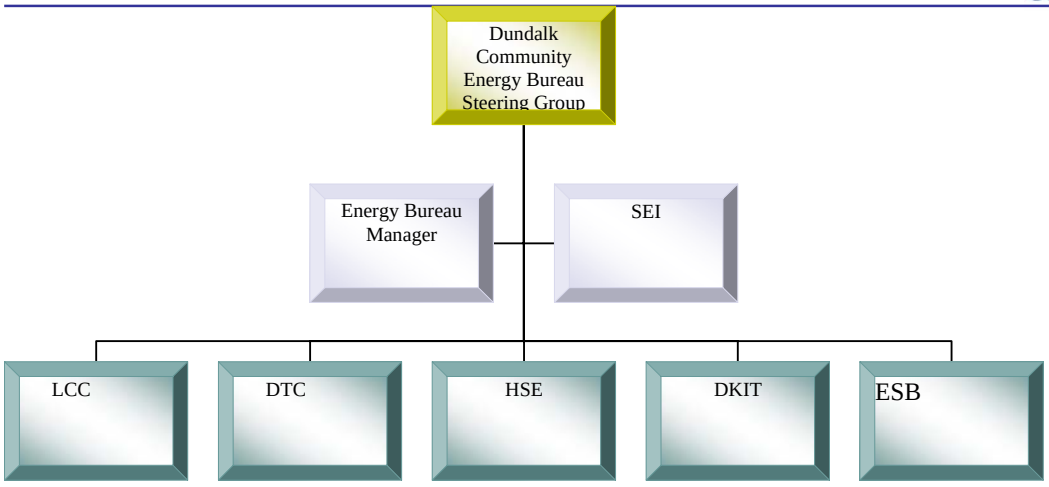


Figure 17: *Proposed structure of the Dundalk Energy Bureau Steering Group.*

Work has been completed to date by HOLISTIC partners to ensure the measuring and monitoring for Dundalk SEZ remains on track.

- **ESB NETWORKS** has collated data in relation to electricity usage within the zone. This data has been collected for the residential sector and is in aggregated format, but this will be sufficient for the incumbent Bureau to understand energy flows for the residential sector.
- **INDUSTRY STAKEHOLDERS:** SEI, through its national remit as the Sustainable Energy Authority of Ireland has developed a sector specific programme for Industry. This programme manages large industry and SMEs through encouraging participation in structured energy management systems, namely IS 393 and Energy Map[3]. The Dundalk SEZ does not have industry partners in the HOLISTIC contract, but none-the-less SEI has ensured they participate fully with the activities of the Dundalk community. Through implementation of energy management systems local industry now understands internal energy flows, and this information will be readily available to the incumbent Energy Bureau.
- SEI completed an **ENERGY MASTER PLAN** for the Dundalk SEZ, which outlines the energy inputs and outputs for the zone. This plan comprises of an excel spreadsheet overlaid with a CAD drawing of the zone. This Plan was presented to and well-received by DTC, and consequently DTC has completed an Energy Master Plan for the town of Dundalk.
- SEI has commenced an energy awareness / behavioural change programme with the residents of **ARD EASMUINN** estate in Dundalk. This is a middle income estate of primarily detached and semi-detached homes built in the 1970's. The residents association are very enthusiastic and proactive and they requested to be involved in an energy savings project. The Ard Easmuinn estate is located just outside of the Dundalk Sustainable Energy Zone and their involvement aligns with the principle of Zone / Town / Region as roll out of principles and practices learnt within the zone. The project also affords Power of One,[4] an Irish Government initiative, the opportunity to investigate opportunities for rolling out the Power of One Street activities but with lower

[3] Further details can be found on www.sei.ie/business
[4] Further information can be found on www.powerofone.ie

levels of direct involvement of energy coaches towards wider national replication.

The programme will involve an Energy Coach coaching the members of the residents association who in turn will assume responsibility for teaching / coaching the residents of the estate. To date there have been two public meetings open to all residents, each attended by approximately 70 householders, where the programme approach / rationale was explained and householders encouraged to participate. Already more than 160 of the 212 (21 homes are not occupied, thereby giving an 84% take-up of the initiative) households have signed a Charter signalling their willingness to participate and setting out the targets which the residents association set of 20% energy efficiency over the period of the project. The 'train the trainer' sessions cover 6 topic areas and they are (1) space heating, (2) domestic hot water, (3) small appliances, (4) lighting and (5) cooking. Each topic is discussed in an individual session and homeowners are then encouraged by the residents association to implement tips. Private transport, topic area (6) is being addressed across the entire period. A range of existing collateral / resources from Sustainable Energy Ireland and Power of One are being used throughout the project. ESB Customer Supply is assisting through the provision of aggregated details of electricity usage in the various roads within the estate, and has provided historic data for 2006 and 2007. Progress on efficiency gains will be monitored over a one year period.

PARTNERS: The only partner to this work package is ESB. However SEI has significantly contributed but is not looking for additional resources.

DEVIATIONS FROM WORK PACKAGE:
None, deliverables 21 and 22 delayed until month 18 and month 20 respectively.

DELIVERABLES ACHIEVED IN THE YEAR:
None, deliverables 21 and 22 delayed until month 18 and month 20 respectively.

MILESTONES ACHIEVED IN THE YEAR:
None, delayed as outlined above, revised milestones will be:

M16 Bureau tender issued
M18 Bureau service provider selected
M20 Bureau in operation
M24 First annual report completed

2.2 DEMONSTRATION

WORK PACKAGE NAME: DUNDALK: POLYGENERATION AND DISTRICT HEATING

WORK PACKAGE NUMBER: 2D1

WORK PACKAGE OBJECTIVES:
To significantly reduce the consumption of fossils fuels within a mix of existing and new development through the provision of a district heating network, CHP and boiler plant principally fuelled from locally sourced woodchip to provide heating, hot water and electricity. To appoint a new ESCO to install, operate and manage the assets on a long term basis.

PROGRESS TOWARDS OBJECTIVES:
There has been significant progress made on this work package, but it should be noted that original dates for deliverables were overly optimistic in light of the complex nature of legal negotiations to select an ESCO. Until the ESCO is selected and appointed, SEI will manage this work package to ensure the deliverables are achieved.

In November 2006, prior to signing the HOLISTIC contract but during contract negotiations, SEI created a Dundalk Steering Group to oversee implementation of the HOLISTIC project within the Dundalk SEZ. To compliment the Steering Group task orientated Action Groups were created as outlined in figure 18.

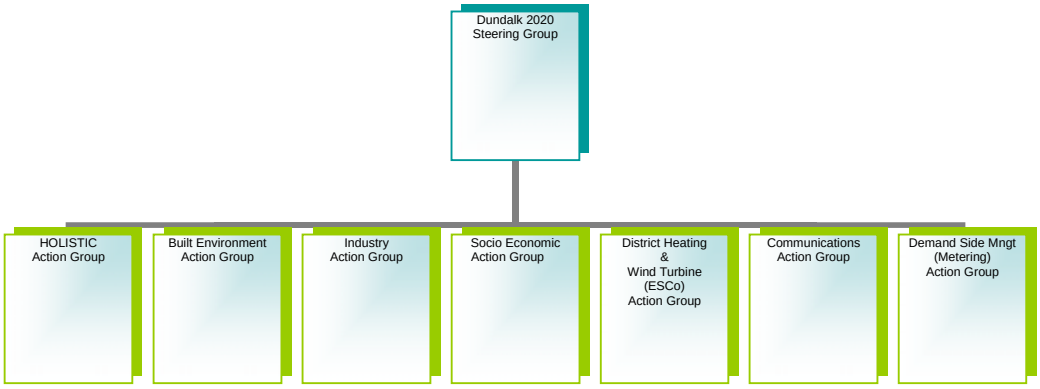


Figure 18: *Structure of Dundalk Steering and Action Groups*

It should be noted that a District Heating (ESCO) Action Group (AG) was created to progress this work package. The ESCO AG has met once per month since January 2007, and this has resulted in robust progress towards the work package objectives. The ESCO AG comprises of a number of organisations who have a desire to see this work package completed, and they are SEI, DTC, LCC, DKIT, Teagasc, Department of Education and HSE. The ESCO AG is working toward selection of an ESCO that will design, build, finance and operate (DBFO) a biomass district heating scheme fired from 3MW biomass boilers with a 9MW gas back-up. A small CHP unit will be integrated into the system to provide the electrical needs to operate the district heating system, and thereby making it a green system. The ESCO AG will work to ensure Dundalk meets its 20% renewable heat target.

Significant work is underway in several strategic areas that are essential to complete this work package:

BIOFUELS: A report was presented to the ESCO AG outlining fuel and associated storage requirements for the biomass boilers. From initial feasibility studies the annual energy demand is calculated as ~14,000MWh, and from this it is expected the biomass boilers will supply 85% of the total heat demand. Assuming an overall boiler efficiency of ~80%

this will give an annual boiler consumption of ~15,000MWh. On an annual basis this will require approximately 3,750 tonnes or 18,750m3 of wood chip (at 20% moisture). While commonplace across much of mainland Europe, there is only a limited developed wood fuel supply infrastructure in Ireland, and in particular in the Dundalk area. A local supply of wood chip is not essential for this work package to proceed but it would be preferable in order that the biomass district heating is locally sustainable. In the environs of Louth and Meath the following statistics for potential wood fuel apply:

- Woodland – 3090 Ha
- Short rotation coppice – 55 acres of willow and 15 acres of miscanthus

SEI and Teagasc[5] are working together to develop a local wood fuel supply chain. It is anticipated the work undertaken for Dundalk will be replicable for the island of Ireland. The steps taken to develop this supply chain are as follows:

- Collaboration with the Agricultural and Rural Development group, a sub-group responsible for the implementation of the aspects of the Louth County Development Plan, which are relevant to agriculture. One of the main objectives of this committee is to promote alternative and sustainable land use. Consequently the members are anxious that local farmers should be in a position to supply the woodchip required to fuel Dundalk's biomass boiler.
- SEI and Teagasc have developed an economic calculator to allow green energy growers to prepare a profit and loss sheet for growing different fuel types. This calculator will be web-enabled and available from both SEI and Teagasc web sites.
- Prepare information packs for those interested in growing energy crops – this pack will incorporate information from agronomy to harvesting to locations of biomass boilers in Ireland.

It is expected through the above actions interest will be stimulated in developing a local supply chain for fuel.

PROCUREMENT PROCESS: As district heating is commonplace in Europe, it was anticipated that the technical solution for the Dundalk district heating would not be a barrier to this work package. However this scheme is the first of its type for Ireland and from a legal and contractual perspective it presents new challenges for the organisations involved. It is worth noting that no biomass district heating scheme of comparable size exists in Ireland (at time of writing this report). Due to the complex legal nature of selecting an ESCO it was considered prudent to appoint legal advisors to this work package. The legal advisors to SEI, Mason Hayes Curran, were appointed to provide legal guidance and advice on this work package.

Through consultation with the partners to the project, and in particular the ESCO AG, it was decided to use a public procurement procedure called competitive dialogue procedure. The competitive dialogue procedure was designed to give the contracting authority the freedom to discuss the contract specifications with potential bidders, where the project is considered suitably complex and where the contracting authorities "*are not objectively able to define the technical means…capable of satisfying their needs or objectives: and/or are not objectively able to specify the legal and/ or financial make-up of a project."* This procedure was introduced in the Directive 2004/18/EC. There are several stages to the competitive dialogue process and in order to explain progress to date the following bullet points will discuss each stage in respect of this legal progress:

- Selection of the contracting authorities – it was decided that the contracting authorities should be DKIT, HSE and Louth Vocational Educational Committee (VEC)[6] in conjunction with SEI.

[5] The Irish Agriculture and Food Development Authority

[6] Louth VEC is acting on behalf of O'Fiach secondary school, which is located in the Dundalk SEZ.

- It was also decided that the contracting authorities would comprise the evaluation committee to review tender proposals as submitted by ESCOs. In addition to the contracting authorities 3 independent advisors contribute to the evaluation committee.
- Publication of an Information Memorandum (IM) and Pre Qualification Questionnaire (PQQ) – both of which were published via a contract notice on the 24th September 2007. The contract notice in respect of this procurement was published in the Official Journal of the European Union and on the Irish Government e-tenders website. All queries related to this contract notice were received by the 12 October 2007 and responses were circulated on the 26 October 2007.
- A complete PQQ was submitted to the contract administrator by the 9th November 2007, and in all eleven consortia responded to the first stage of the procurement process. The initial proposals were evaluated by the Evaluation Committee on the 21st November. Through evaluation five consortia were invited to the next stage of the process.
- On the 14th of March 2008 the Invitation to Tender for Competitive Dialogue (ITCD) was issued to the five consortia, as well as a draft Heat Purchase Agreement, a draft Operation and Maintenance Agreement, and a draft Design and Build Agreement. To compliment this process the consortia were allowed to submit queries up until the 31st March 2008 and these queries were responded to by the 7th April 2008. Due to the complex nature of this process it was considered prudent to allow the consortia submit a second round of queries and these were submitted on the 9th May 2008. A response was provided to the consortia on the 23rd May 2008.
- Since the issue of the ITCD all the consortia have had the possibility to review the proposed location of the energy centre which would house the boilers. Tenders to the ITCD are to be submitted on the 17th June 2008. Following this there will be a period of dialogue with evaluation committee and subsequent to this a final tender will be prepared. It is anticipated that final contracts will be issued towards the end of 2008.

ENVIRONMENTAL: Discussions have occurred between representatives of the Evaluation Committee and Environmental Department of Louth County Council regarding air emissions standards for biomass district heating. It was agreed by both parties that there will be no environmental permits or licences required by the ESCO to operate biomass district heating, based on current legislation.

Even though the biomass district heating falls below legislative thresholds it is important that through its operation it does not cause a nuisance. To ensure this doesn't happen best practice for environmental controls must be implemented at all times. In the ITCD there is a requirement for the ESCO to outline how they will implement best practice regarding environmental controls.

ADDITIONAL: In parallel to the above processes additional work has been carried out to ensure the Dundalk biomass district heating scheme is viable and can be replicated:

- Through work to date it has been noted that the VAT rate for heat from a biomass district heating scheme is 21% and by comparison other Utilities (gas/ electricity) charge a VAT rate of 13.5%. SEI has approached the Irish Revenue Commissioners who have indicated that the VAT rate for biomass district heating should be at 13.5% but they cannot change the rate until a formal request is made. SEI has made a formal request to change same and anticipates a positive outcome.

- SEI has worked closely with DTC to develop a sustainable energy proposal for Dundalk town's Gateway Innovation Bid. Dundalk town is designated a Gateway Town under Irish Spatial Strategy, and was so entitled to submit a bid for funding to further develop the town. The submission indicated that DTC would lay 10km of district heating pipe network whilst it was building a new road. This network would service new residential and commercial buildings proposed for the North West part of Dundalk. Preparatory work involved preparing an energy master plan for the town, which indicated actual and proposed heat requirements.
- SEI liaised with the Crowne Plaza Hotel to ensure it instated district heating pipe network when it was constructing its new hotel. Pipes were installed in June 2007, as can be noted in figure 19.

Figure 19: *District heating pipes delivered and installed at the crowne Plaza hotel*

PARTNERS: Partners to this work package are DTC, DKIT and SEI with an ESCO yet to be appointed.

DEVIATIONS FROM WORK PACKAGE:
There are no deviations from this work package other than the deliverables are delayed, where deliverable 10 will be realised in month 19 and deliverable 11 will also be realised in month 19.

DELIVERABLES ACHIEVED IN THE YEAR:
No deliverables have been achieved in the year, and revised dated are identified above.

MILESTONES ACHIEVED IN THE YEAR:
No milestones have been achieved in the year, and revised dated are identified above.

WORK PACKAGE NAME: DUNDALK: WIND TURBINE

WORK PACKAGE NUMBER: 2D2

WORK PACKAGE OBJECTIVES:
To erect a large wind turbine of 1.8MW capacity on an industrial site, sized and operated as an auto producer to provide for base load electricity demand of the site.

PROGRESS TOWARDS OBJECTIVES:
The work carried out to date has followed on from the initial feasibility study carried out for Xerox on the industrial estate within the Dundalk Sustainable Energy Zone in order to identify the most suitable size of turbine for the location. The study was carried out by Dr Larry Staudt of the Centre for Renewable Energy at Dundalk Institute of Technology (CREDIT) who was responsible for the erection of the first 850kW wind turbine which is located at the centre of the Dundalk Sustainable Energy Zone. This study identified a 1.8MW turbine as the most efficient due to mast height for wind access and the sizing most suitable for base load consumption on site. CREDIT have now a full year of detailed wind data from their own turbine and they also temporarily installed wind measurement equipment on the roof of the Crown Plaza Hotel (14 floors +) that logged 10-minute average wind speed and wind direction from November 2007 to February 2008. The logged data was analyzed and correlated with the wind data recorded by the DkIT wind turbine. The results will be useful in deciding the final design and where the second wind turbine will be placed.

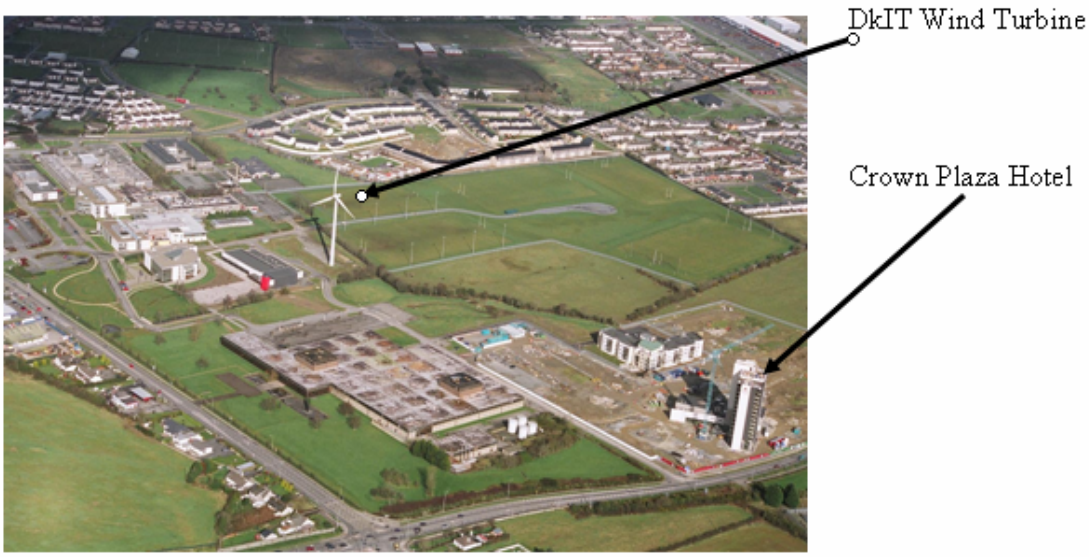


Figure 20: *Test location for wind data in Dundalk sustainable energy zone*

It was initially envisaged that this project would proceed via the ESCO as a third party rather than directly through Xerox. This was partly because Xerox load profile analysis also demonstrated that their usage would only cover Monday to Friday usage and the proposal was that ESCo could distribute the weekend loads to other local users. This would involve testing a new private wire concept in Ireland as private wire is currently not permitted by the Commission for Energy Regulation. It was also decided that as the Wind Turbine was a more complex project even standing alone that it would significantly delay and add to the already complex WP 2D.1 – Polygeneration and District Heating. Alternative options are being explored to avoid this regulation issue and this has involved

extensive discussions to find new partners for the turbine. These have been aggressively pursued and due for finalising over the remaining months of 2008. The main potential new partners for this work package are IDA and/or Louth County Council and as both are current partners in the HOLISTIC project any changes will just be by way of fund re-allocation.

A dedicated Project Manager with experience in wind projects has been appointed to assist these partners in carrying out initial feasibility studies looking at their particular situations. He will continue by assisting new WP partners with the identification of their most suitable site and in the subsequent planning application process.

Since the project proposal was submitted, new Irish National targets for wind generation (to achieve 33% of electricity generation from wind by 2020) have been adopted. A recently completed All-Island of Ireland demonstrates potential wind penetration of 42%. Peak load for Ireland is approximately 5000 MW and there is currently 3000 MW of wind in a planning queue which confirms the potential. However this will take several years to process and implement. There is also an issue nationally with an increase in negative public perception and an increase in objections to wind generation projects. In Dundalk we have continued to engage with all local stakeholders and are involving the local community in the project in other areas (WP 1.1 Socio Economic and WP 2.D8 Smart metering) to ensure the public awareness of the full project.

PARTNERS: Partners to this work package are currently LCC, DKIT, SEI and the ESCO yet to be appointed. However, for the reasons outlined ESCO may change to another current HOLISTIC partner during the M13-30 period.

DEVIATIONS FROM WORK PACKAGE:
The problems described above in relation to national regulations on private wires, planning difficulties and the risks to WP 2D1 of using the ESCo to manage both WPs have required modification of this WP. Work is already well advanced to find new partners and the installation of the wind turbine has been re- scheduled for M40. This will ensure that the objectives of the WP will be achieved in spite of the difficulties encountered to date.

DELIVERABLES ACHIEVED IN THE YEAR:

No deliverables required in the first report period

MILESTONES ACHIEVED IN THE YEAR:

The milestones relating to the selection of the ESCO are no longer relevant given the problems referred to above.

WORK PACKAGE NAME: DUNDALK: STREET LIGHTING

WORK PACKAGE NUMBER: 2D3

WORK PACKAGE OBJECTIVES:

To provide lighting columns powered by small scale renewable energy generators within the car parks and pedestrian areas surrounding new office and business start-up unit developments owned and administrated by the IDA.

PROGRESS TOWARDS OBJECTIVES:

The Renewable Energy (RE) public lighting project involves installation and monitoring of a hybrid RE system, comprising of micro-wind/solar energy source to provide the electrical supply for amenity outdoor lighting system in a Business Park, which is owned and operated by IDA Ireland. The project objectives are focused on the renewable sources of energy to power the outdoor lighting within Finnabair Business Park but the project will also evaluate the lighting options in terms of lamp type with technical evaluation of such factors as:

- Colour appearance
- Luminous efficacy
- Colour rendering
- Lamp life
- Controllability and reliability

The project objectives accordingly encompass both the clean or green production of electricity using micro-generation from renewable sources and also focus on suitable lighting solutions in terms of efficiency and outdoor application taking account of emerging technology solutions for outdoor lighting and lux level controllability.

The RE aspect of the project involves the investigation of the reliability and security of power sources using stand alone and grid-connected systems using inverters for changing power from dc to ac to enable connection to the grid. One of the main concerns with RE sourced micro generation is security and reliability of supply for the public lighting network. The hybrid combination should improve the reliability of supply and the project will monitor this aspect over the project life. As the RE lighting will be erected in a public area a decision was taken by the Partner not to install all the lighting columns until a report on the safety assessment would be completed.

The project to date has mainly focussed on desktop studies of lighting options available and micro-generation using hybrid combination of wind/solar. The project has already identified suitable options for RE using a hybrid combination and also linked with this is the opportunity for efficient and controllable light output. In addition to RE solutions, there are some emerging technology solutions on lighting types (i.e. LED or CFL lamps) with much improved luminous efficacy compared to conventional sodium lighting. Controllability of lighting is also improving to counteract the prevalence of lighting pollution becoming more prevalent, though not evidenced in the Finnabair Business Park in Dundalk.

Five prototype hybrid RE systems were installed during 2007 and 2008 in the business park in Dundalk SEZ. These lighting systems comprise of a 1.1 kW wind turbine and solar panel for battery charging on 9 meter steel column.

The next phases of the RE lighting project involves:

- Selection of suitable area within Finnabair Business Park based on wind and solar considerations.
- Seek proposals/tenders for lighting solutions with hybrid micro-generators.
- Evaluate proposals/tenders.
- Arrange the necessary contract and approval procedures with IDA Ireland
- Implement civil/construction stage.
- Arrange monitoring equipment for power security/reliability of supplies.
- Monitor performance over a 6 month trial period.
- Report on findings and recommendations.

Figure 21 and 22: *Hybrid lighting systems on test in Dundalk Sustainable Energy Zone.*

PARTNERS: IDA, the main partner behind this project, has recently (April 2008) appointed an expert consultant to drive and manage this project forward.

DEVIATIONS FROM WORK PACKAGE:
Deliverable 13 has been delayed as the partner wishes to undertake some studies of the lighting columns as installed to understand if there are any issues regarding security and reliability of supply. For this reason a report on same will be prepared as a precursor to installing all 40 of the lighting columns. However there is a strong commitment from IDA for this work package to proceed.

DELIVERABLES ACHIEVED IN THE YEAR:
Deliverable 13 is delayed as outlined above

MILESTONES ACHIEVED IN THE YEAR:
No milestones achieved

WORK PACKAGE NAME: DUNDALK: RETROFIT: HOUSING

WORK PACKAGE NUMBER: 2D4

WORK PACKAGE OBJECTIVES:
Refurbishment of existing housing stock in order to improve the energy efficiency of the housing stock. To install modern heating systems using a mix of condensing gas boilers and wood pellet boiler systems. To study the socio economic benefits of using modern systems and compare the renewable technology running costs with the fossil fuel technology in a domestic environment.

PROGRESS TOWARDS OBJECTIVES:
Significant progress has been on this work package in certain areas. Dundalk Town Council in co-operation with SEI have co-ordinated the energy efficiency improvements in 300 homes retrofitted with insulation. 120 homes have been fitted with condensing gas boilers which replaced open fire solid fuel systems. This first phase of work has resulted in a reduction in energy requirements of 64% on pre project levels. Works are being carried out in phases as residents are continuing to live in the homes while the work is being carried out. All of the work is on low income homes and is on a mix of public and private ownership.

PARTNERS: DTC are the lead partner in this work package

DEVIATIONS FROM WORK PACKAGE:
There have been some delays in retrofitting homes with wood pellet boilers, as residents have a preference for natural gas central heating. DTC are actively working with residents to identify homes who wish to install wood pellet boilers.

DELIVERABLES ACHIEVED IN THE YEAR:
Deliverable 14 and 15b were both delivered on time.

MILESTONES ACHIEVED IN THE YEAR:

M1 - Houses identified with owners consent

M6 - Insulation upgrades complete

M12 – Condensing gas boilers installed

WORK PACKAGE NAME: DUNDALK ECO BUILDINGS – NON RESIDENTIAL

WORK PACKAGE NUMBER: 2D5

WORK PACKAGE OBJECTIVES:

To bring the original buildings within the DKIT campus, Louth County Hospital and O'Fiach secondary school up to energy efficiency standards corresponding to new building regulations following implementation of the EU Energy in Buildings Directive in January 2006.
To improve the energy efficiency of recently constructed hotel and student accommodation.

PROGRESS TOWARDS OBJECTIVES:

To discuss this work package it is simpler to discuss the organisations and buildings separately.

O'FIACH: Work has been completed on O'Fiach Secondary School ahead of schedule, and this has resulted in overall improvement in air tightness from 12.2cu.m/hr to 3.76cu.m/hr at 50Pa. This is approximately a 60% improvement in energy efficiency of the building. To achieve this work the building went through a complete refurbishment to the building fabric. This included:

- Replacement of inefficient lighting with low energy fittings (35W T5) controlled by occupancy and daylight sensors
- Insulation added to building roof (150mm thick foam cladding and weatherproof skin attached to existing roof)
- All heating pipes insulated
- Installation of double glazed windows with low e-glass throughout building
- Insulation added to exterior of building walls (110mm foam cladding)

The improvements to energy efficiency are obvious but there are also socio economic benefits to completing such work. The environmental team which comprises of students from O'Fiach secondary school implemented a project to track energy consumption data. The students working on this project are now motivated to make further energy savings and educate all students in the school. Indeed the student's project was submitted for an ECO UNESCO award.[7] The school is also participating in WP 2D1 biomass district heating.

Figure 23: *Refurbishment in progress at O'Fiach secondary school*

[7] ECO-UNESCO specialises in environmental education and environmental youth work. It is a non-profit organisation providing practical environmental education services to young people, youth groups, schools and interested individuals.

LOUTH COUNTY HOSPITAL: The HOLISTIC Project successfully completed Addendum I to the Project in November 2007 to allow for the Health Services Executive (HSE) to become a partner to the Project. This Addendum was pre the first annual contract amendment as the HSE had a commitment to have work completed by the end of year 2007. The HSE is the organisation that manages the work in the Louth County Hospital.

The work to be completed by the HSE is to be completed in two stages, where stage I is refurbishment of the roof of the hospital and stage II is refurbishment of the walls of the hospital building. Stage I has been completed, and this has seen insulation added to building roof of 80mm thick. The space heating demand associated with heat losses through the building roof has reduced by 76% as a result of the additional insulation fitted, based on theoretical energy consumption calculations carried out.

The retrofit of the walls of the hospital will be completed in tandem with connecting the hospital to biomass district heating.

Figure 24: *An overview photo of upgrade to roof of the hospital*

DKIT: Work is not completed on the retrofit of buildings on the DKIT campus, but the revised date for the deliverable is month 24 of the Project, rather than the originally planned month 18. DKIT remains committed the HOLISTIC Project and are investing significant resources in both the retrofit and district heating aspects of the Project. The campus of DKIT has undergone significant expansion in the past number of years and it now has a student population in excess of 5,000. To meet the needs of both students and staff the college has built new buildings to high energy efficient standards to address capacity needs. Within its 2008/9 budget it has allocated funds to begin retrofit of older building stock.

On a separate issue DKIT participates in the International Sustainable Campus Network, which is a network of 20 Universities ranging from Harvard and Yale in the USA to EPFL in Switzerland. There is a commitment from all Universities to develop their campus using the principles of sustainability, and DKIT has taken this one step further to develop their campus as a low to zero carbon campus.

HOTEL AND STUDENT ACCOMMODATION: When the HOLISTIC Project was submitted to the Commission work was already underway to complete the new build for the hotel and student accommodation. The 14-storey hotel is part of the Crowne Plaza Group, and it officially opened in November 2007. The student accommodation is a separate building on the southern edge of the DKIT campus. It is a 4-storey building with 10 apartments in every storey. The building fabric of both the hotel and student accommodation meets the specifications as outlined in their respective BEST sheets, and this is outlined in the report for deliverable 17. However the actual deliverable is to install an energy management system in the hotel and student accommodation. This has been completed in both cases and the deliverable report will reflect same. However the systems installed

are separate so it is proposed to carry out some comparison between the systems over the next year. This data will then be reflected in the outputs from the Community Energy Bureau.

PARTNERS: Partners involved in this work package are DKIT and HSE with assistance from SEI.

DEVIATIONS FROM WORK PACKAGE:

Retrofit to the hospital roof and to O'Fiach secondary was completed ahead of schedule. Work on DKIT is progress approximately 6 months behind schedule.

DELIVERABLES ACHIEVED IN THE YEAR:

Deliverable 16 has been split into deliverable 16a, 16b and 16c, where 16a is O'Fiach secondary school, 16b is Louth County Hospital and 16c is work on DKIT. 16a has been completed, and 16b partially completed. Reports have been submitted to the Coordinator.

Deliverable 17 has been completed and submitted to the Coordinator.

MILESTONES ACHIEVED IN THE YEAR:

M8 – Technical specification issued for O'Fiach College – completed ahead of schedule.

M12 – Commence work on O'Fiach College – commenced ahead of schedule

M12 – Energy management systems in hotel and student accommodation

M18 – Work complete on O'Fiach – completed ahead of schedule

M19 – Contract appointed for refurbishment of hospital – completed ahead of schedule

M36 – Retrofit works complete on hospital – roof retrofit has been completed ahead of schedule.

WORK PACKAGE NAME: DUNDALK: NEW ECO HOUSES

WORK PACKAGE NUMBER: 2D6

WORK PACKAGE OBJECTIVES:

To provide 100 new houses designed and built to energy efficiency standards 40% above new building regulations.

PROGRESS TOWARDS OBJECTIVES:

Good progress has been made on this work package, and the majority of the work has been completed at this stage. Over 100 homes have been completed to a 40% improvement over building regulations, but these homes are within different housing developments. The purpose of using different developments is to allow for comparison between the different sustainable energy technologies condensing back boilers, district heating and wood pellet stoves. All of the homes included in this work package meet SEI'S House of Tomorrow Programme (HOT)[8] .

CONDENSING GAS BOILERS: In the College Heights development 54 homes were completed to 40% better than building regulations, and in all of these home condensing gas boilers have been installed.

Figure 25: *An example of a home in the College Height development*

DISTRICT HEATING: In the Carlinn Hall development it is planned to build 234 units, and to date 80 properties have been completed. These properties have been built to 40% better than building regulations, and all of these homes are connected to biomass district heating. This system currently operates independently of the proposed biomass district heating in WP 2D1, but it is envisaged that it will be connected to the main scheme once it is operational.

[8] HOT was launched in September 2001. The heart of the programme was a demonstration scheme which part funds private and social housing developments that deliver a saving of over 40% in energy consumption and associated CO2 emissions relative to what would apply under current Building Regulations.

Figure 26 and 27: *Where 24 is a typical home in the Carlinn Hall Development, and 25 is the district heating pipe network being installed in site.*

WOOD PELLET STOVES: To date no wood pellet stoves have been installed in new build homes. It is planned to incorporate this part of the work package in new build social homes.

PARTNERS: SEI is the main partner involved in this work package, but little money has been drawn down proportional to deliverables for month 0 to 18.

DEVIATIONS FROM WORK PACKAGE:

There are no deviations from the work package.

DELIVERABLES ACHIEVED IN THE YEAR:

Deliverable 18 has been achieved and submitted to the Coordinator.

MILESTONES ACHIEVED IN THE YEAR:

M8 – construction of new houses completed – complete

M12 – homes occupied by new owners

WORK PACKAGE NAME: DUNDALK: NEW ECO BUILDINGS

WORK PACKAGE NUMBER: 2D7

WORK PACKAGE OBJECTIVES:

To construct new ECO offices with energy performance >30% better than national regulations which will also provide a demonstration of various sustainable technologies.

PROGRESS TOWARDS OBJECTIVES:

Progress on this work package has been slow, and this is a reflection of the downturn in the Irish economy. This work package is set to deliver new office buildings but there is currently not a high demand for such infrastructure in Ireland.

PARTNERS: IDA is the partner for this work package, and SEI is working with them to move this work package forward in a sensible fashion.

DEVIATIONS FROM WORK PACKAGE:

This work package was due to commence in month 4 but for reasons as outlined above this work package is not expected to commence until month 18.

DELIVERABLES ACHIEVED IN THE YEAR:

No deliverables achieved

MILESTONES ACHIEVED IN THE YEAR:

No milestones achieved.

WORK PACKAGE NAME: SMART METERING AND DSM STUDY

WORK PACKAGE NUMBER: 2D8

WORK PACKAGE OBJECTIVES:

To pilot a customer-led demand side management study using smart metering technology in 100 residential and SME sites.

PROGRESS TOWARDS OBJECTIVES:

This work package has progressed extremely well, and at the initial stage of the work package it was believed prudent to install 200 interval basis, rather than the planned for 100, to allow for more robust statistical analysis of data. ESB Networks sourced and installed 200 interval meters, two months ahead of schedule. At a national level this work package is now seen as an enabling trial for national energy policy and represents a key element of the demand side management (DSM) policy for Ireland.

For this reason the scope of the work package was further developed and refined:

- Assess user behavioural response to a range of stimuli using electronic interval electricity meters involving a trial group 200 of urban domestic users within the four km^2 energy zone in Dundalk.
- Access the implications for a larger national SMART metering programme from a range of perspectives with particular emphasis on Demand Side Management (DSM).

Behavioural response: In this section three different stimuli will be used to assess user response, and these are (1) education and awareness, (2) in-home displays, and (3) monthly load information and financial inducement. The residents for the behavioural trial have been selected, and this part of the trial began from the 1st June 2008.

The next phase involves DSM promotion and assessment of responses to the DSM stimuli being implemented. ESB Networks role now shifts to a *Meter data flow coordinator*.

The project is leading the way at a national level in Ireland in guiding the national SMART metering project involving 25,000 domestic and SME electricity clients. The project is well advanced and provided key learnings for the national SMART metering trial.

Figure 28: *Residents of Muirhevena Mór, with SEI and DTC officials, standing at newly installed interval meter and holding in-house display*

PARTNER: ESB is main partner to this work package, and SEI are providing support but not charging time.

DEVIATIONS FROM WORK PACKAGE:

Increase the number of interval meters from 100 to 200 to provide stronger statistical data.

DELIVERABLES ACHIEVED IN THE YEAR:

Deliverable 20 has been submitted to the Coordinator to install 100 homes with smart metering. The project completed its key deliverable ahead of schedule with 200 interval meters installed by March 2008.

MILESTONES ACHIEVED IN THE YEAR:

M6 – Completed of study design report – complete

M9 – Selection of contractor for meter installation – complete

M12 – Meters installed – complete

WORK PACKAGE NAME: MÖDLING: INSTALLATION OF RE SUPPLY & STORAGE

WORK PACKAGE NUMBER: 2.M1D

WORK PACKAGE OBJECTIVES:

The objective is to construct a pump storage system for renewable energy which uses the drinking water system.

PROGRESS TOWARDS OBJECTIVES:
The conceptual and detailed technical design of the drinking water turbine for electricity generation is completed and ready for implementation (see 2M1r). To realise this work package the partners involved initiated a procurement procedure for the civil works for the hydro plant. A separate procedure was undertaken to purchase the inverse pumps and additional components. A detailed project plan was prepared outlining key timelines to be achieved.

Civil work for the generator is underway and the generator/pump has been delivered to site. This element of the work is 4 months ahead of schedule.

The generator is in the water flow from the natural supply to the town reservoir and will replace a pressure reduction valve. This work package supports hybrid power generation from renewable sources and the hydro storage is one facet of this.

For local awareness campaigns the plant is being realised in a way that it can be observed by the passing citizens.

Figure 29 and 30: *In figure 28 the inverse pump to be installed, and in 29 MOD representatives and HOLISTIC Project Board.*

PARTNERS: Partners to this work package are MOD, TBB with support from FHWN

DEVIATIONS FROM WORK PACKAGE:

No deviations,

DELIVERABLES ACHIEVED IN THE YEAR:

Deliverable 24: Site defined, design completed and construction schedule.
Due: month 12, Achieved: month 12.

MILESTONES ACHIEVED IN THE YEAR:

Month 6: Construction site defined, operator organisation established, interfaces defined.

Month 12: Economic viability proved, construction procedures defined, principal design and schedule prepared.

WORK PACKAGE NAME: MÖDLING: SOLAR ENERGY

WORK PACKAGE NUMBER: 2.M2

WORK PACKAGE OBJECTIVES:

The objective of this work package is to perform quantitative analysis of the performance of the installation and to guarantee optimised procedures for detailed planning, designing and implementing of a building Integrated Photovoltaic (BIPV) system in an office eco building constructed in 2M5. Furthermore a Solar Roof Program for Mödling based on regional and national financial support schemes (investment and generation based promotion strategies) will be designed to promote solar electricity and heating within the community.

PROGRESS TOWARDS OBJECTIVES:

For streamlining and promoting local available funds for the integration of renewables detailed discussions between MÖD, TBB and FHWN were organised. As a result of these discussions a new Solar Roof Program is designed in order to interconnect particular local and HOLISTIC grants. The Draft Solar Roof Program was presented for a joint agreement on the town council meeting on 7 March 2008. It should be noted that it can only be draft at this time (see comments on the Green electricity Act below).

MDK has applied two eco building for the allowance to construct them at the office of urban planning in Mödling. One eco-building received already partly the allowance from the community servants, and the foreseen BIPV is still under discussions.

PARTNERS: Partners to this work package are MOD, SOL4, MDK and TBB with support from FHWN.

DEVIATIONS FROM WORK PACKAGE:

Due to the delayed publication of the novel Austrian Green Electricity Act municipal discussions about the Solar Roof Program for Mödling and co-funding of the applied BIPV started late, but in co-ordinated way. The draft Programme may need modification in the when the Act is agreed. There will be marginal delays in terms of administrating the expected funding requests.

The integration of the foreseen BIPV in one of the eco-building is still under discussions.

The delays are unfortunate but as the new Act will determine the price to be paid for electricity from PV it is vital that clarity on this is gained before proceeding too far. This work package is still expected to be completed well within the life of the project.

It was not originally envisaged that FHWN would participate in this work package, but they have provided support to the work package leader. This has been taken into consideration in the contract amendment.

DELIVERABLES ACHIEVED IN THE YEAR:

Deliverable 26: Solar Roof programme Mödling approved by authorities
Due; month 12, Achieved: month 12

Note that this is draft only, to be revised in the light of the Green Electricity Act, when approved.

MILESTONES ACHIEVED IN THE YEAR:

Month 9: Final design of the Solar Roof Programme Mödling - on schedule but draft only

Month 12: approval of Solar Roof Programme Mödling - on schedule but draft only

Month 12: BIPV construction site defined, operator organisation established, interfaces defined – partially complete, delayed awaiting agreement on Green Electricity Act

WORK PACKAGE NAME: MÖDLING: INSTALLATION OF BIOENERGY CHP PLANTS

WORK PACKAGE NUMBER: 2.M3

WORK PACKAGE OBJECTIVES:

The objective of this Work Package is to provide new bioenergy supplies to the community as a major contribution to Mödling's community renewables targets.

PROGRESS TOWARDS OBJECTIVES:

In depth analysis of the local available material and logistics has been performed by TBB and the communal servants. This analysis provides factual information on waste fractions arising from Mödling. Fractions identified include waste arising from the local sewage plant, lopping exploiters and forestry. Once the waste streams were identified there was a calculation of the energy yield with local existing waste quantity and optimization of the energy yield by operation with selective substrate. This information allowed meetings be held with the potential purchasers of the heat energy and electricity.

However there is some local opposition to the plans, in line with the analysis of the interviews in WP1.1 which reveals that biogas is not as popular as the other renewables. The opinion of the interviewees seems divergent and polarized regarding new bioenergy supplies. Hence, a change of the application site is underway, and an alternative location is already identified. It is proposed to use a technology which is currently under trial in the Tyrol.

PARTNERS: TBB and MOD are working on this work package

DEVIATIONS FROM WORK PACKAGE:

Due to the poor public perception of biogas in terms of smell and logistic noise the change of the application site is suggested, an alternative location already identified and will be analysed in June 2008.

Considerable design and economic work has been undertaken and the change in site expected should not give rise to serious delays.

DELIVERABLES ACHIEVED IN THE YEAR:
Deliverable 27 has been delayed until month 24

MILESTONES ACHIEVED IN THE YEAR:
None

WORK PACKAGE NAME: MÖDLING: IMPROVED ENERGY EFFICIENCY IN BUILDINGS

Work Package Number: 2.M4d

WORK PACKAGE OBJECTIVES:
The objective is bringing the older buildings (i.e. > 30 years old) in Mödling up to the energy performance required in new buildings. Energy saving potentials will be identified according to the age of the buildings and required refurbishment identified. (See also 2M4r)

PROGRESS TOWARDS OBJECTIVES:
Priority list of public and private buildings and corresponding contact persons are identified. Using related work packages, especially ground thermography (WP 1.5) and cluster analysis (WP 2M4r) are ongoing. Due to legal obligations all Austrian municipalities have to expand their capacities of Kindergarten. This has given a priority to complete work on the Kindergarten buildings.

The preparatory work of handover certificates as foreseen deliverable per retrofitted building is completed. In December the decision for renovation of the following buildings was taken by the town council, and the co-ordinated planning was completed in March 2008. For reducing disturbances in the running operation of the Kindergarten the renovation will be started in parallel during the summer holidays. The following buildings are concerned:

HYRTLPARK, Hyrtlgasse 2

JOSEF SCHÖFFEL, Untere Bachgasse 3

LERCHENGASSE, Lerchengasse 17

SPECHTGASSE, Spechtgasse 41

HAYDNGASSE, Haydngasse 19-21

LITSCHAUERHOF, Eisentorgasse 1

Photographs of these buildings are outlined in WP 2M4r

The social houses are undergoing a major retrofit to improve the energy efficiency of the buildings. The buildings will receive added insulation to walls and roof and also added to the ceiling of the basement garage. To meet the overall performance new windows, lighting and domestic hot water systems will be installed. All of these interventions will meet the requirements of the BEST sheets. This is interesting project as all the homes will be retrofitted while the tenants continue to live there. For this reason it will be important to keep the tenants informed of progress and this will be done presenting information on bill boards for the particular building and can they can participate in a lottery awarding sponsored energy saving lamps.

Figure 31: *Retrofit to social housing in Modling*

PARTNERS: Partners in this work package are MOD with support from MDK and SOL4

DEVIATIONS FROM WORK PACKAGE:

None

DELIVERABLES ACHIEVED IN THE YEAR:

Deliverable 28: Analysis report and potential plan for energy consumption reductions of 11,800 kWh/annum of older buildings in Mödling at project end.
Due: month 12, Achieved: month 12

MILESTONES ACHIEVED IN THE YEAR:

Month 5: Cluster analysis results of older buildings in Mödling

Month 12: Simulation and evaluation of results

WORK PACKAGE NAME: MÖDLING: IMPROVED ENERGY EFFICIENCY IN NEW ECOBUILDINGS

Work Package Number: 2M5

WORK PACKAGE OBJECTIVES:
The objective of this work package is the construction of new commercial buildings with the energy performance of a passive house standard as an exemplary pilot project in semi-urban districts for the sustainable construction of a working and living environment.

PROGRESS TOWARDS OBJECTIVES:
The concept and allowance solicitation of the combined new and retrofitted building at the Mödlingbach are completed. Co-financing issues and the elaboration of the corresponding energy performance certificates will be conducted in the coming months. The existing building shall be retrofitted according to the requirements of BEST M4g and the extended new eco-building according to the requirements of BEST M5b.

Figure 32: *Architects design at the Mödlingbach*

PARTNERS: Partners in this work package are MOD, MDK and SOL4

DEVIATIONS FROM WORK PACKAGE:

No deviations

DELIVERABLES ACHIEVED IN THE YEAR:
Deliverable 29: analysis report and potential plan about the foreseen measures to achieve the targeted passive house standard.
Due: month 12, Achieved: month 12

MILESTONES ACHIEVED IN THE YEAR:
Month 12: analysis, simulation and evaluation results – on schedule

WORK PACKAGE NAME: MÖDLING: ELECTRICAL LOAD BALANCING

Work Package Number: 2.M6d

WORK PACKAGE OBJECTIVES:

The objective is to design pilot systems demonstrating how industrial demand, specifically for refrigeration of the warehouses of supermarket chains, can be used for load levelling. Existing compressor technologies will be used, but will be extended with latent cooling storage and with a novel control strategy. (See also 2M6r)

PROGRESS TOWARDS OBJECTIVES:

Supermarkets have substantial energy expenditures to ensure the cooling chain of food products and to keep the quality criteria. The investigations within this WP rely on a defined "reference refrigerated warehouse" of SPAR performed in work package 2.M6r. Results of the corresponding investigations will transferred to comparable supermarkets located in Mödling, using the following procedure:

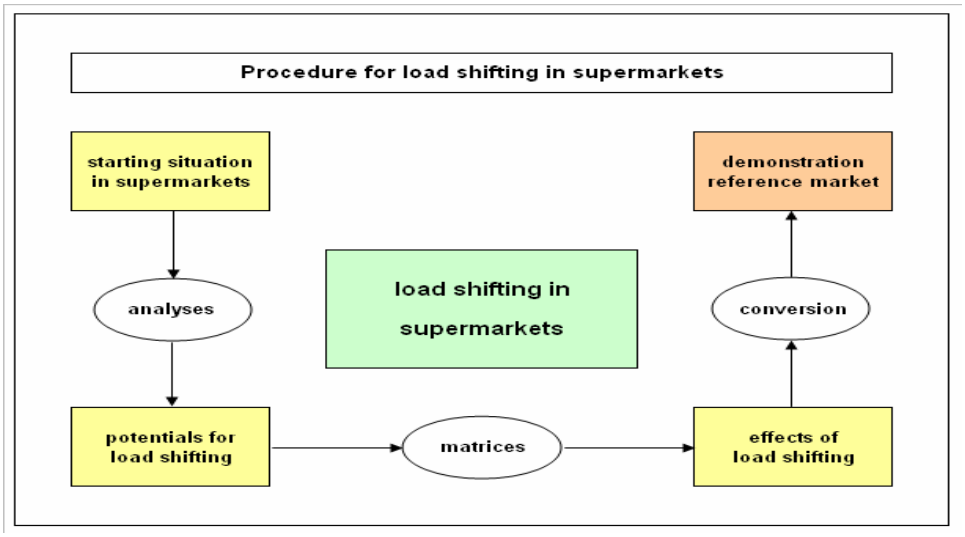


Figure 33: *Scheme for load shifting in supermarkets*

PARTNERS: Partners in TBB and MOD

DEVIATIONS FROM WORK PACKAGE:

None.

DELIVERABLES ACHIEVED IN THE YEAR:

Deliverable 30: Analysis, simulation and evaluation of results.
Due: month 12, Achieved: month 12

MILESTONES ACHIEVED IN THE YEAR:

None in this period

WORK PACKAGE NAME: NEUCHÂTEL: NEW RENEWABLE SUPPLY - PV & WIND

WORK PACKAGE NUMBER: 2.N1

WORK PACKAGE OBJECTIVES:

The goals of this WP are:

- to realise the photovoltaic plant on the new stadium
- to realise the photovoltaic plant upgrade on the technical college CPLN (+11 kW)
- to implement 2 large 2 MW wind turbines in a prominent position overlooking the city and producing 7,500 MWh/year of renewable electricity.

PROGRESS TOWARDS OBJECTIVES:

This work package has made good progress to meet the overall objectives, and description of work can be split into photovoltaic and wind.

PHOTOVOLTAIC: The overall requirement as outlined in the CDS is for Neuchâtel to install 3,835m^2 of photovoltaic (PV) plant on the new stadium. To date over 750m^2 of PV has been installed and connected to the grid, as seen in figure 34. Unfortunately it was installed prior to the start date of the HOLISTIC contract, as construction work was advanced on the stadium. The remainder of the PV will be installed over the remainder of the period of the Project.

The PV plant at the technical college, CPLN, will also be upgraded. Significant work has been completed on performing feasibility studies prior to commencing construction of same. The construction of the plant will be done with the participation of the students. For this reason, the construction timing has to correspond to the study period and be integrated in the student program. It will take place from august 2008 to December 2009. For this reason there is a delay in submitting the deliverable, but through student participation this adds value to the work package and indeed embeds the CONCERTO principles deeper within the community.

Figure 34: *PV panels as being installed for this work package*

WIND TURBINES: the project details were finalized in March 2008 and submitted to the authorities for the construction authorization. The answer is expected by M22. According to the information received so far, the potential public oppositions are limited. Indeed legal precedent has been set through a recent Supreme Court Ruling. On the 31st of

August 2006, the Swiss Supreme Court gave authorisation to erect wind turbines on Le Crêt-Meuron, which is a nature reserve on the Jura Mountain range. As precedent has been set this makes the process for this work package less problematic.

PARTNERS: The partner for this work package is NTEL

DEVIATIONS FROM WORK PACKAGE:

The industrial services of the Ville de of Neuchâtel (NTEL) have been reorganised and given a status of a limited company with the main partner being the NTEL. This new company is called VITEOS. This restructuring allows VITEOS complete the actual work for the Ville de Neuchatel, as NTEL does not have the capacity. Given this new status, all projects which were planned by the former industrial services of Neuchâtel have been formally approved and taken over but will be rescheduled. This does not lessen the commitment from Ville de Neuchâtel to all the work packages to be completed in Neuchâtel.

The first 750m^2 of PV plant for the new stadium was installed ahead of schedule. At this time the deliverable report has been prepared but as the installation of 750m^2 was installed prior to 1st June 2007, costs cannot be claimed for this portion.

As it has been decided to integrate the construction of the PV plant within the study program of the CPLN school, the construction of the PV tracking plant had to be rescheduled. The deliverable 34 will be achieved in December 2009 (M30).

DELIVERABLES ACHIEVED IN THE YEAR:

Deliverable 33 has been delivered but as it was delivered before the start period of for the HOLISTIC contract costs are not claimed at this time. However over the full period of the project 3,835m^2 of photovoltaic

MILESTONES ACHIEVED IN THE YEAR:
M12 – Connection to the grid of new 750m2 PV plant delivering 65 MWh renewable electricity

WORK PACKAGE NAME: NEUCHÂTEL: HYDROPOWER

Work Package Number: 2N2

WORK PACKAGE OBJECTIVES:

The goals of the work package are:

- to realise a small hydro installation at the outlet of the sewage plant,
- to retrofit the hydro plants la Serrière
- to create a new plant on Le Seyon

PROGRESS TOWARDS OBJECTIVES:

Good progress has been made on this work package with the primary focus to ensure front-end feasibility is completed. NTEL has to date completed all preparation work and now is moving forward to deliver 1,877 MWh/yr of electricity.

TURBINE AT THE OUTLET OF THE SEWAGE PLANT: The preparation project of a small hydro installation at the outlet of the sewage plant has been finalised. The installation has been rescheduled due to the introduction of VITEOS – see description below under 'deviations from work package.'

RETROFITTING OF THE HYDRO PLANTS OF LA SERRIÈRE: the preparation project has been conducted. It has been submitted to the authorities but public opposition have arisen but NTEL remain confident that it will proceed on schedule. At the moment, it is too early to provide a final estimate when this situation will be solved.

NEW HYDRO PLANT ON LE SEYON: this project is under preparation.
Turbine at the outlet of the sewage plant: The preparation project of a small hydro

DEVIATIONS FROM WORK PACKAGE:

As outlined in work package 2N1 all projects to be completed by NTEL will now be completed by VITEOS. For this reason all work, previously to be completed by the Industrial Services of NTEL, will be rescheduled. The revised date to deliver the turbine at the outlet of the sewage plan (deliverable 35) is June 2009 (M24).

DELIVERABLES ACHIEVED IN THE YEAR:

No deliverables achieved this year

MILESTONES ACHIEVED IN THE YEAR:

No milestones achieved this year

WORK PACKAGE NAME: NEUCHÂTEL: DISTRICT HEATING

Work Package Number: 2N3

Work Package Objectives:

The goals of the present WP are:

- to achieve 1 GWh energy savings in the district heating of la Maladière by decreasing the temperature and adapting the heat exchangers in the buildings,
- to install a heat pump extracting heat from the waste water of the sewage plant to feed the low temperature loop of the district heating,
- to demonstrate optimal integration of RUE and RES, by combining the above action with the temperature decrease in the grid and operating the heat pump with the electricity produced by the wind turbines, leading to an overall non-renewable energy savings of 2 GWh/year

PROGRESS TOWARDS OBJECTIVES:

Significant work has been made to allow approximately a 20^0C decrease in temperature on the district heating. This work is on target and will be achieved in summer 2008. It is anticipated there will be at least 1,110 MWh/yr energy savings.

The study project for the heat pump, extracting heat from the waste water of the sewage plant has been conducted.

Detailed analysis had to be carried out in order to determine the most appropriate heat exchangers. For each building, a new heat exchanger will be installed in order to decrease the temperature at the exit of the buildings.

Figure 35: *Chauffage urbain de la Maladière*

PARTNERS: This work package is completed by the Canton de Neuchatel (NE).

DEVIATIONS FROM WORK PACKAGE:

No deviation.

DELIVERABLES ACHIEVED IN THE YEAR:

No deliverables scheduled for this report period.

MILESTONES ACHIEVED IN THE YEAR:

No milestones scheduled for this report period

WORK PACKAGE NAME: NEUCHÂTEL: RETROFIT OF DWELLINGS

WORK PACKAGE NUMBER: 2N4

WORK PACKAGE OBJECTIVES:

the goals of the work package are.

- to completely retrofit a building (Les Saars 95) of 8 flats of 1955 construction (771m2)
- the retrofitting of an architecturally valuable building (Gilbraltar 7, 9, 11) of the seventies, located in a very visible place and reaching the current standard for a new building without alerting the facades by exploiting all the technical possibilities
- to measure accurately the energy impact of the retrofitting of les Saars 95 and Gibraltar 7, 9, 11

PROGRESS TOWARDS OBJECTIVES:

There has been a minor rescheduling of work in order to complete the construction work on the retrofit of Les Saars. This rescheduling was incurred due to public opposition to the retrofit, but fortunately this problem was rectified through constructive collaboration between all parties. This work will now be completed in month 16 rather than month 12. However work is underway to retrofit the building and is proceeding well with the revised schedule, approximately 90% complete. Les Saars is a 1950's building of 771m^2 and when completed it is anticipated to reduce energy demand by 70%, or 100 MWh/yr.

Gibraltar is also a residential retrofit and comprises of 3530 m2 and comprises of 8 flats and 8 offices. It is important that the architectural integrity of the building is not comprised. A pre-study for the building Gibraltar has been completed and it is hoped to complete the retrofit by month 48.

PARTNERS: The partner NE is completing the work with the assistance of PLAN.

DEVIATIONS FROM WORK PACKAGE:

The retrofitting of the building "les Saars" will be finished end of September (month 16) rather than month 12 because public opposition that occurred in 2007. This problem has been solved

DELIVERABLES ACHIEVED IN THE YEAR:

No deliverables due in this period

MILESTONES ACHIEVED IN THE YEAR:

No identified milestones completed due to the reasons as outlined above.

WORK PACKAGE NAME: NEUCHÂTEL: RETROFIT OF UNIVERSITY BUILDINGS

WORK PACKAGE NUMBER: 2N5

WORK PACKAGE OBJECTIVES:

The goals of this work package are:

- to retrofit the historic building (18th century) of the university of Neuchâtel
- to retrofit the institute of chemistry of the university to the current standard for new buildings without altering the architecturally valuable facades
- to determine accurately the energy efficiency of the retrofitting of the 2 university buildings (historical central building and chemistry institute)

PROGRESS TOWARDS OBJECTIVES:

When the HOLISTIC Project was submitted to the Commission it was not envisaged to complete any physical work on this work package within the first 18 months of the Project. However significant progress has been made and construction work has begun on the 18th century building of the University. Work should be completed in Spring 2009, and this is approximately 12 months ahead of schedule.

This work package is of interest to all communities who wish to make their historic buildings more energy efficiency whilst maintaining the architectural integrity of the building. The retrofit includes roof insulation and replacing the windows and light fittings. In addition to this a study for the integration of solar collectors for DHW is underway, as is a study on the potential ventilation savings.

The Chemistry building is of 1970's architecture and it is planned to bring its energy performance up to new building regulations. The retrofitting of the chemistry building has been integrated in the state budget for 2009.

DEVIATIONS FROM WORK PACKAGE:

No deviation

DELIVERABLES ACHIEVED IN THE YEAR:

No deliverables due in this period

MILESTONES ACHIEVED IN THE YEAR:

M18 – Detailed project plan for the retrofitting with an energy demand reduction of 200MWh/yr.

WORK PACKAGE NAME: NEUCHÂTEL: RETROFIT OF SWIMMING POOL

WORK PACKAGE NUMBER: 2N6

WORK PACKAGE OBJECTIVES:

The goals of this work package are:

- To retrofit the municipal swimming pool, which is one of the largest energy consumers of the city (heat: 3.6 GWh/year) with the use of the groundwater for heating and cooling the complex and installation of the solar collectors and high efficiency heat recovery, leading to a final reduction of the energy demand by 62%
- to monitor the energy savings obtained and to derive general recommendations

PROGRESS TOWARDS OBJECTIVES:

The construction works to retrofit the swimming pool is in progress and according to schedule. A heat pump as well as a condensing gas boiler has already been installed. Measurement of the energy consumption has started. Results will be available in November 2008.

Figure 36: The heating system as installed at the swimming pool.

DEVIATIONS FROM WORK PACKAGE:

No deviation

DELIVERABLES ACHIEVED IN THE YEAR:

No deliverables required for this report period

MILESTONES ACHIEVED IN QTHE YEAR:

No milestones required for this report period.

WORK PACKAGE NAME: NEUCHÂTEL: ENERGY SAVINGS AT NEW HOSPITAL

WORK PACKAGE NUMBER: 2N7

WORK PACKAGE OBJECTIVES:

The goals of this work package are:

- To enter an agreement under the energho procedure[9] with the new hospital (inaugurated in may 2005) for a complete monitoring of the energy consumption (heat and electricity)
- to implement energy saving steps at the new hospital
- to monitor accurately the energy consumption of the new hospital

PROGRESS TOWARDS OBJECTIVES:

Even though the hospital was opened in 2005, they were mandated to achieve 10% energy savings under the ENERGHO programme. "The ENERGHO programme offers a special service aimed at reducing energy consumption in complex public buildings by at least 10 percent in five years, in particular by optimising the operation of systems. ENERGHO is an association, and proposes training, exchange of experiences and findings, and advising on energy management optimisation. Subscription to ENERGHO is done on a voluntary basis, and allows building managers to benefit from these services and to carry out an audit of their building."[10]

The first phase of the work package is to complete a report on how the 10% savings can be achieved and this study is in progress, and will be published in month 18.

DEVIATIONS FROM WORK PACKAGE:

During the preparation of the project, the hospital was under the responsibility of the Ville de Neuchâtel (NTEL). Reorganisation took place and NTEL is longer in charge of this building. The energy consumption of this type of building (i.e. a large consumer) is under the responsibility of the Canton (NE). For this reason, it will be proposed for the annual report, to change the responsible partner from NTEL to NE.

DELIVERABLES ACHIEVED IN THE YEAR:

No deliverables required in this report period

MILESTONES ACHIEVED IN THE YEAR:

No milestones identified for this report period

[9] http://www.energho.ch/

[10] Meyer, Bénédicte. March 2003. AUDIT II Country Report SWITZERLAND. SAVE Project

WORK PACKAGE NAME: NEUCHÂTEL: NEW ECO BUILDINGS

Work Package Number: 2N8

Work Package Objectives:

The goals of this work package are:

- a high school and 6 new eco buildings offering 100 flats with the energy performance more than 30% better than the national regulation for new buildings
- a new commercial building in the Ecoparc sector, by the railway station, with energy performance more than 30% better than the national regulations for new buildings
- to monitor accurately the energy consumption of the new commercial building, the new high school and the 6 new dwellings

PROGRESS TOWARDS OBJECTIVES:

The construction work of the housing building 8a and 8b (annex 1 of the contract, best sheets) are finished. These homes offer high quality accommodation in the Ecoparc quarter, near the town centre and adjacent to the railway station of Neuchâtel. There location contributes to the sustainable mobility goals for the city of Neuchâtel. In comparison with a standard building, following improvements were implemented in order to reduce the consumption of non renewable energy:

- The design of buildings incorporate key principles relating to bioclimatic architecture, particularly the use of a certain density and a separation in the degree of opening of the south and north facades. This feature lessens thermal losses and maximises passive solar gain.
- Location of flats maximises the use of natural light and thereby restricts the need for in artificial lighting. However where artificial lighting is used it is energy efficient.
- The thermal insulation of the building envelope far exceeds that required by law, and all aspects of the building, whether it is the roof, façade or at ground level. For information, the thickness is 20 cm in facades and 20 cm in roofing.
- The building has optimised the use of air circulation within the building, and guarantees optimum conditions of comfort in winter, while minimizing thermal losses by aeration. This is implemented through heat recovery ventilation. The principle is common and it uses a centralised unit that removes the stale air from rooms. The heat from this waste air is collected by a heat exchanger, and the heat is then used to heat the incoming fresh air. Both the outgoing and incoming air is filtered. This saves on heating bills whilst providing a healthy environment for building occupants.
- Both buildings are equipped with thermal solar cells in roofing, which will supply about 50% of needs of domestic hot water. The surface of solar cells is 45 m^2 for the building of the “Espace de l'Europe 20” (BEST 8a) and 30 m^2 on the “Rue du Crêt-Taconnet 19” (BEST 8b). The balance of the production of heating is assured by a common gas boiler linked up with urban network.
- Attention was also given to the embodied energy contained in the construction materials and life-cycle analysis being accomplished for some elements, to restrict impacts on environment.

These buildings were construction in accordance with originally envisaged concept. Work was implemented by BAU with directional assistance from the Cantonal Energy Office with the aim of the getting of the quality-label Minergie. The performances of buildings

therefore comply with fixed objectives, with energy performance more than 30% better than the national regulations for new buildings. The performance of the buildings will be discussed in detail in deliverable 42 which is due month 18.

In addition to completing the work on BEST sheet 8a and 8b, the following buildings are also in progress:

- The elementary school is under construction, according to schedule and objectives. The technical installations are at the point to be finished as well as the building envelop.
- The construction permit for the commercial building (which will finally be a high school) has been obtained. The building philosophy will be according to the Minergie standard and with a better performance of 30% in comparison to the national regulation.
- The owner of the future buildings of “Les falaises” (best sheet 8e) has to choose the company which is going to carry out the construction work.

PARTNERS: BAU with the assistance of PLAN are implementing this work package

DEVIATIONS FROM WORK PACKAGE:

The commercial building will be used as a school and it will have the same characteristics as the commercial building and be in the same location.

DELIVERABLES ACHIEVED IN THE YEAR:

No deliverables required for this period

MILESTONES ACHIEVED IN THE YEAR:

No milestones identified for this period

WORK PACKAGE NAME: NEUCHÂTEL: BUILDING OPTIMISATION

WORK PACKAGE NUMBER: 2N9

WORK PACKAGE OBJECTIVES:

To identify and then optimise the energy performance of selected buildings in Neuchâtel, with the goal of 10% energy savings during the CONCERTO II period.

PROGRESS TOWARDS OBJECTIVES:

Buildings which need to be optimised have been identified using aerial thermography (as outlined in horizontal WP 1.5), and through a review of the energy consumption of each building. Based on this methodology the highest energy consumers were identified. In total there are 30 buildings that, if energy efficiency is addressed, will meet the 10% energy savings.

Letters addressed to these buildings owners have been prepared in order to propose to the buildings owners to enter an Energho program (as outlined for work package 2N7). A meeting will be organized mid year to explain the Energho concept in detail, and the invited target audience will be invited building owners of the selected buildings.

PARTNERS: PLAN is leading this work package

DEVIATIONS FROM WORK PACKAGE:

No deviation

DELIVERABLES ACHIEVED IN THE YEAR:

No deliverables required for this report period

MILESTONES ACHIEVED IN THE YEAR:

No milestones required for this report period

2.3 DISSEMINATION

WORK PACKAGE NAME: DISSEMINATION OF HOLISTIC THROUGH CONCERTO PLUS

Work Package Number: 5.1

WORK PACKAGE OBJECTIVES:

Common EU wide dissemination activities

PROGRESS TOWARDS OBJECTIVES:

As with work package 1.8 this is also value-add to the CONCERTO programme but unconventional. It is unconventional in that no deliverables or milestones were set for this work package. Despite this, significant progress has been made to share and disseminate information at an EU level on HOLISTIC and CONCERTO.

CONCERTO PLUS TEAM: The HOLISTIC Project has provided information to the CONCERTO Plus team to allow them develop dissemination material for CONCERTO. This includes but is not limited to:

- Provision of information for community specific description
- Provision of key contact names for topic areas
- Provision of Annex I to CONCERTO Plus team

LOGO: The Project Coordinator in conjunction with the three Community Project Managers (CPMs) finalised a logo for the HOLISTIC Project, see figure 37. The logo has been created in a variety of formats to suit various applications such as print and web versions. It has also been created in three styles to suit the target audience. This logo was issued to all partners with guidelines on use.

HOLISTIC
Dundalk • Mödling • Neuchâtel

HOLISTIC

HOLISTIC
Holistic Optimisation Leading to Integration of Sustainable Technologies in Communities

Figure 37: *HOLISTIC Logos*

PHOTOGRAPHS: A variety of photographs has been provided to CONCERTO Plus

MILAN: The Project Coordinator presented at the Italian Regional site visit to provide an overview of the HOLISTIC Project, whilst concentrating on the Italian Ministry for the Environment Land and Sea input to HOLISTIC. This Regional site visit was well attended and there was participation from CONCERTO I and II communities.

LAUNCH OF CONCERTO II: There was good participation from HOLISTIC at the launch of CONCERTO II in Brussels from the 19th to 20th February 2008. This was a good opportunity for the HOLISTIC Project to participate discussions on all aspects of CONCERTO Plus, and indeed lead discussions on shaping the CONCERTO Vision.

PUBLICATIONS: The Project Coordinator, in consultation with a journalist, developed a article for publication in the New York Times, which has a print and on-line audience of 21.9 million. This article primarily featured the Dundalk community and successes to date but it did make reference to all communities in HOLISTIC and indeed to the CONCERTO Programme. This article was published on the 9th April 2008, and the article can be read in full at http://www.nytimes.com/2008/04/09/technology/techspecial/09town.html. This story was replicated in full in the Spanish newspaper El País which has a circulation of over 2 million.

HOLISTIC NETWORKING EVENT: On the 28th of May the Project Coordinator launched the first HOLISTIC All Partner meeting, followed by networking sessions. This was the first opportunity that many partners had to come together to discuss the work to be carried out within HOLISTIC. It was attended by three members of the CONCERTO Plus. The subsequent networking session was divided into three thematic areas which were (1) academic, (2) enterprise, and (3) facilities management/ city services. Each session had a dedicated Rapporteur who at the end of the respective sessions reported back to the full group. This was a great achievement for the HOLISTIC consortium as contacts were made to further develop and embed HOLISTIC/ CONCERTO principles within communities.

REGIONAL SITE VISITS: PLAN attended the Regional site visit in Grenoble, France in May 2008.

CONFERENCES: Partner SEI attended conference on development and management of ESCOs.

DEVIATIONS FROM WORK PACKAGE:

There were no deviations from the work package

DELIVERABLES ACHIEVED IN THE YEAR:

There were no deliverables due for this period

MILESTONES ACHIEVED IN THE YEAR:

There were no milestones due for this period

WORK PACKAGE NAME: DISSEMINATION IRELAND

Work Package Number: 5.2

WORK PACKAGE OBJECTIVES:

- To promote HOLISTIC in Ireland as a lighthouse project across the Island.
- To directly influence a new development in Newry along CONCERTO lines.

PROGRESS TOWARDS OBJECTIVES:

Excellent progress has been made on both objectives for this work package, and all Irish partners are actively promoting the HOLISTIC project, with emphasis to Dundalk, across Ireland.

PRESENTATIONS: SEI has presented at a number of conferences on the HOLISTIC Project, these include the following:

- Presentation at Louth Schools Environmental Awards (June 2007)
- Presentation at North South Rural Voice meeting in Ireland (October 2007)
- Presentation to the International Centre for Local and Regional Development (November 2007)
- Presentation to the Southern Eastern Regional Assembly (April 2008)
- Presentation to Green Party Councillors prior to National convention (April 2008)
- Presentation at conference organised by SERVE Project "Green Energy Conference - Sustainable Energy Solutions & Opportunities" (May 2008)

MEETINGS: The HOLISTIC concept has been presented to numerous organisations at direct meetings. Key meetings are outlined below with others mentioned in Table 1 in Annex I:

- Meeting with Minister of State for Environment and Energy (November 2007)
- Meeting with Northern Ireland Housing Executive who are interested in implementing HOLISTIC principles into their housing stock (February 2008)
- Meeting with Chief Technical Advisor for Energy at the Department of Communications, Energy and Natural Resources (October 2007)

GATEWAY: As mentioned in WP2D1 SEI has worked closely with DTC to develop a sustainable energy proposal for Dundalk town's Gateway Innovation Bid. This bid focused on several key areas:

- Installation of district heating pipe network whilst new roads are being constructed
- Construction of off-road dedicated cycle pathways
- Construction of homes with 20% carbon reduction
- Purchase and operation of 3 hybrid buses by National Operator between Newry and Dundalk route.

MINISTERIAL LAUNCH OF CARLINN HALL: The Minister for Department of Communication, Energy and Natural Resources officially launched Carlinn Hall on the 5th October 2007. This development is one of the developments as outlined in WP2D6. The Minister in his press statement made the following comments: "Dundalk is clearly and successfully leading the way in sustainable development in Ireland. It shows us that by working together across a community, people can and are making the choice to switch to greener

energy, to greener homes and to greener living…Dundalk is a template for every Irish town and city. The people of Dundalk are leading the green revolution making it a European centre of excellence in sustainable development. I would like to see this replicated across the country.

DECEMBER 11 EVENT: On the 11th December 2006 SEI launched the Dundalk 2020 Charter. This charter makes a commitment to meet the targets of the Dundalk SEZ, of 20% renewable heat, 20% renewable electricity and 40% energy efficiency in buildings by 2010. In all 26 organisations signed this Charter and these organisations were a mix of local and national and public and private. This Charter was signed pre Commission contract in order to focus the efforts of all Dundalk stakeholders. In order to acknowledge the contributions made by each organisation a anniversary event was hosted by SEI on the 11th December 2007. It is planned to hold this event on an annual basis.

DUNDALK 2020 WEBSITE: SEI developed a website for the Dundalk community. This website is part of the SEI website. Further details can be found at www.sei.ie/dundalk2020. The structure of the website was developed in consultation with local Dundalk partners, and is outlined in the following wire diagram (figure 38):

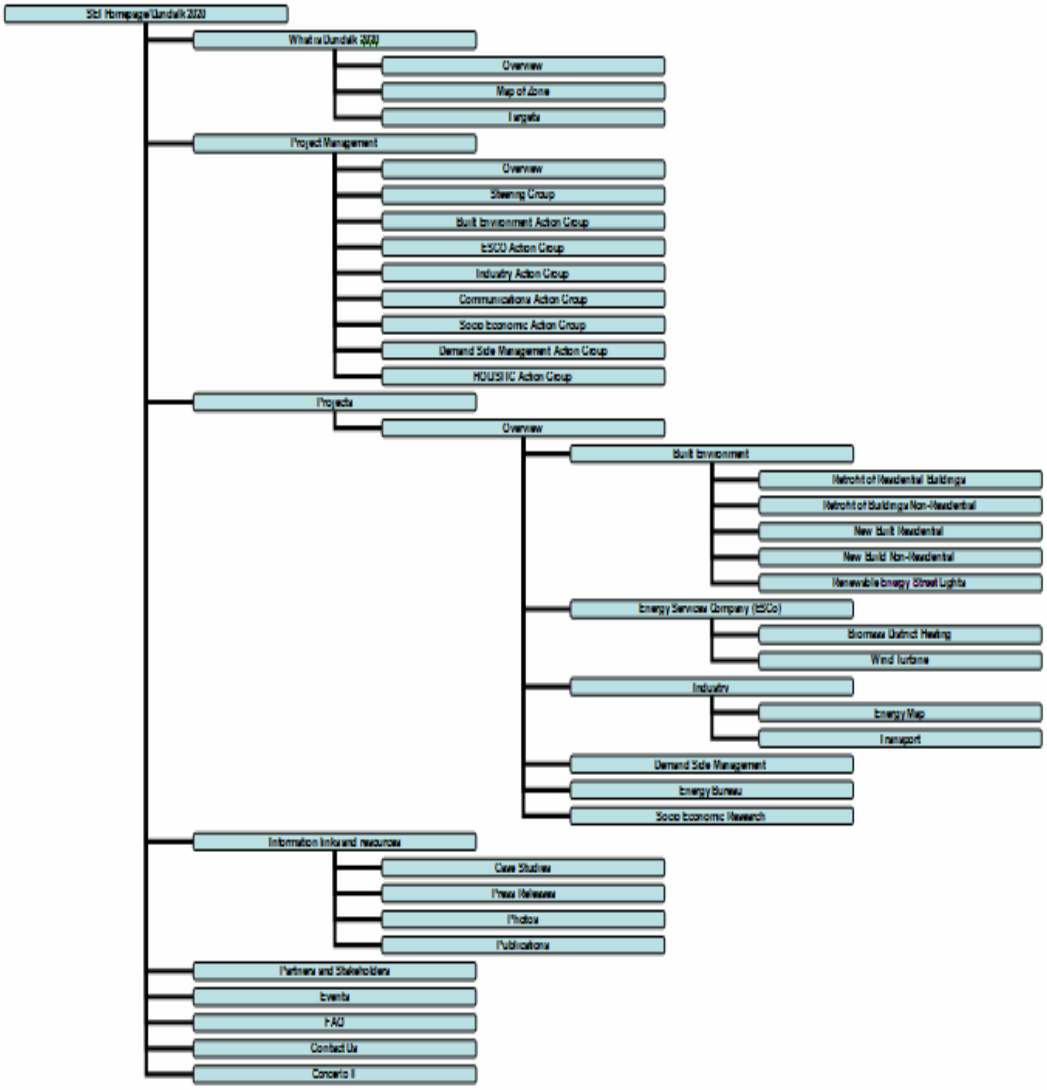


Figure 38: *Wire diagram for Dundalk HOLISTIC website*

DUNDALK ECONOMIC DEVELOPMENT GROUP (DEDG): The DEDG is tasked with promoting Dundalk INC as place to come to for living, for work and for leisure. This in turn incurs an economic benefit. Part of the programme was to "rebrand" Dundalk, and when doing so the DEDG were cognisant that energy and the HOLISTIC Project has a signigicant role in how the economic development of the town could be shaped. The adopted logo (figure 39) is:

Figure 30: *Logo for Dundalk Town*

ADDITIONAL: There is also the fact that the former County Manager for Louth, in which Dundalk is located, has become the County Manager for Galway. She now wants to adopt the HOLISTIC principles in her new county.

Ireland has two designated regions for EU Structural Funds Purposes, and they are the Border Midland & Western Region and the Southern and Eastern Region. This allowed for the establishment of two Regional Assemblies, which came into effect in July 1999. Each Region produced an Operational Programme from 2007 to 2013, and in this they have set out a commitment to develop sustainable energy communities within their Regions. From discussions with the Regions it is expected that SEI will assist in developing such communities.

NEWRY: Newry and Mourne District Council launch a competitive call for developers to submit proposals for the Albert Basin in April 2007. The Albert Basin is a 15 acre sites in the centre of Newry city. The brief as given to was provide proposals on a development to incorporate commercial, residential, retail, leisure and civic amenities whilst incorporate the principles of sustainable development. SEI has worked closed with Newry and Mourne District Council to shape the tender document and is now participating on the evaluation committee for proposals. In addition SEI has had meetings with other interested parties such as Newry Chamber of Commerce.

In addition to this Newry and Mourne District Council has spoken of the Albert Basin development with reference to including HOLISTIC principles to government departments, such as DETI, DFP and DOE. Newry has used various dissemination tools such as a website dedicated to the Albert Basin, information leaflets and meetings.

PARTNERS: SEI is Work package leaders with support from LCC, NEW, DTC and DKIT

DEVIATIONS FROM WORK PACKAGE:

No deviation from the work package

DELIVERABLES ACHIEVED IN THE YEAR:

No deliverables required in this report period

MILESTONES ACHIEVED IN THE YEAR:

No milestones required in this report period

WORK PACKAGE NAME: DISSEMINATION AUSTRIA / GERMANY

Work Package Number: 5.3

WORK PACKAGE OBJECTIVES:

The objective is to encourage replication by active dissemination of the HOLISTIC project, with particular focus on the associated community Aachen.

PROGRESS TOWARDS OBJECTIVES:

A dissemination plan for Mödling was derived from interview results of WP 1.1. An overall dissemination plan for the entire project duration time has been developed. The dissemination plan comprises of the “communication handbook”, the “communication concept reference book” and the outline map. All three parts are conceptually elaborated and need to be discussed along with the community steering group. Thereby specific target groups and dissemination channels are specified in accordance with the HOLISTIC principles, foreseen with the applications and measures at local and interregional level.

A local HOLISTIC website was designed, and went live in April 2008. It can be found at www.holistic-moedling.at

Subsequent to the third Project Board which was hosted by Modling, there was a study tour on the 29th May. This study tour reviewed:

- Passive house and/ office design
- Retrofit of social housing
- Visit to hydro plan
- Visit to biomass CHP plant

AAC and FHWN exchanged possibilities to organise the cooperation conference of communities the Aachen Energy Days event in November 2008 by launching the first necessary preparatory steps.

PARTNERS: FHWN are the work package leaders and they are supported by AAC, MOD and TBB

DEVIATIONS FROM WORK PACKAGE:
SOL4 will not participate as a formal partner to this work package, and their contribution will move to FHWN who has the necessary skills to complete.

DELIVERABLES ACHIEVED IN THE YEAR:

No deliverables required in this report period.

MILESTONES ACHIEVED IN THE YEAR:

No milestones required in this report period

WORK PACKAGE NAME: DISSEMINATION SWITZERLAND

Work Package Number: 5.4

WORK PACKAGE OBJECTIVES:

The objectives are:

- to promote the replication in Neuchâtel and the surrounding regions in Switzerland by active dissemination of the Holistic project
- to maintain tools that can be used by other holistic zones for the same purpose

PROGRESS TOWARDS OBJECTIVES:

An internet website (www.holistic-ne.ch) has been created as a first – transitory - step for dissemination while data is gathered and enough actions are taken that can be promoted. This website will be the official one during M4-13. The full and replicable, HOLISTIC-NEUCHATEL website is still in progress given the complex, but end-user friendly cartographic part that has to be created in conjunction with thermography and other data sources. This should be implemented by M14.

Dissemination activities have already been carried out: information has been given to the population in organizing meeting and information via mail. Articles and interviews about the Holistic project have been published in several newspapers, on the Swiss and local TV and on local and regional/national radios. A new set of media release will take place as soon as the final website is ready to attract stakeholders and other potentially interested people onto this central user friendly data base.

DEVIATIONS FROM WORK PACKAGE:

"MIRROR" was proposed in Annex I of the HOLISTIC contract, and was only to be considered the working name of the website that was planned. This name will no longer be used. This will not change the intended user friendly tools to be implemented in the website.

A first website has been implemented and can be found at the following address www.holistic-ne.ch. The full website will be implemented by M13. This delay on the full functionality of the website is due to data availability (mainly: thermography under analysis, legal questions about the ability to publish thermography on a public website)

DELIVERABLES ACHIEVED IN THE YEAR:

Deliverable 50 due month 12 – Promotional Material and activities of various kinds to be delivered. Due end of quarter

MILESTONES ACHIEVED IN THE YEAR:

M2 – Research and development – Internet tool

M12 – Implementation of internet tool (Phase I is Neuchâtel's HOLISTIC website which is implemented. Phase II of the website will be implemented in M13)

M2 – Research and development – communication and participation strategies for citizens and other stakeholders

M12 – Implementation – communication and participation strategies

WORK PACKAGE NAME: DISSEMINATION ITALY

Work Package Number: 5.5

WORK PACKAGE OBJECTIVES:

The objective is to bring the experience of the HOLISTIC Project to both Italy and the Mediterranean area.

PROGRESS TOWARDS OBJECTIVES:

Significant progress has been made on this work package which underpins the MATT's commitment to HOLISTIC and CONCERTO. The work completed identifies communities that can incorporate HOLISTIC/ CONCERTO principles into their municipalities.

Many dissemination activities have occurred over the past year, and this includes:

SUSTAINABLE ENERGY EUROPE CAMPAIGN: Work continues on the Sustainable Energy Europe Campaign and the MATT has formed a link to CONCERTO with this campaign. , Sustainable Energy Community Activated partners. The interest in selecting communities that can apply the Holistic design is based the following main issues:

- Transformation towards the environmental and energy sustainability, acting in all the Community sectors
- Typical Communities in the European cities and towns
- Promotion of Communities in Italy and across Mediterranean Area, as a benchmark of excellence of sustainable cities
- Innovation:
    - o Holistic approach, integration RES, RUE, mobility…
    - o Private-public joint commitment
    - o Financial solutions
    - o Urban planning, management
    - o Communication, socio economic aspects

The active partners in the SEE Campaign belong to municipalities, provinces, regions, energy agencies and Concerto I and Concerto II projects such as: A.P.E.V.V., ARE Liguria, Municipality of Alessandria & Politecnico of Torino, Municipality of Lodi, Municipality of Milan, Com. Montana Fiorentina, FIAT Research Center, Geovest-AESS, Province of Milan, Lombardia Region, Lazio Region, Sardinian Region, Province of Bozen, Federabitazione Europe, La Casa Ecologica. The organisations are broad and have strong affiliations to communities across Italy, which leads to effective dissemination of the HOLSITIC/ CONCERTO principles.

There are several communities interested in adopting the CONCERTO concept and this is fully outlined in deliverable 51. The communities identified are:

Urban areas

- Casanova district in the City of Bolzano (Regione Alto Adige) is a proposed district to be developed as a new sustainable energy district. It is proposed to build energy efficient buildings which will take waste heat from the waste incineration plant and heat from the district heating.
- City of Milan (Lombardia Region) - the city of Milan is one of the pioneer cities committed to the Covenant of Mayors. A sustainable action plan will be set up in the near future, according to the Covenant commitments (CO2 emission reduction more

than 20% by 2020). Several projects and plans are being currently implemented or designed. They can be grouped under a common target, which is a better environment and improved life standard. A global target of 20% CO2 emissions' reduction by 2020 has been fixed. The candidature to Expo 2015 has given an impetus to these activities, besides which new projects will be designed and implemented

Rural / island areas

- Sardinia Region, Oristano province – The Sardinian Region is participating in the SEE campaign with the Project "Sardinian Energy Area" dealing with developing awareness, best practices and effective guidelines in order to promote the sustainability at local level. The project is coherent with the strategy of Sardinian Region for implementing a Sustainable Energy Region across the Mediterranean area according to the Regional Energy Plan and previous Campaign for Take off (Sardinia Region Partner), the areas of the SEEC (Communities and communication), the strategy of the Ministry for Environment, Land and Sea to foster. In addition the new Energy Agency of the province of Oristano is looking to initiate sustainable communities in rural areas, on the basis of the rural vocation of the province.

  The municipality of Cabras, situated in the province of Oristano, is acting as showcase study in the EIE project RERINA – Integration of Renewable Energy Technologies in Rural Insular Areas, Coordinated by the Technical University of Crete. In Sardinian Region there are many municipalities similar to Cabras, in which the Holistic approach, combined to the sustainable community approach of the Rerina project can be applied in order to develop sustainable communities in rural island areas. In addition a strategy alliance is in place between the Ministry for the Environment, Land and Sea and ISLENET (Network of European Islands) in order to promote sustainable islands in Italy and across Mediterranean.

DEVIATIONS FROM WORK PACKAGE:

No deviations from work package

DELIVERABLES ACHIEVED IN THE YEAR:

Deliverable 51, due month 6, submitted to the Coordinator

MILESTONES ACHIEVED IN THE YEAR:

M6 – CONCERTO communities selected – details contained within deliverable 51

2.4 TRAINING ACTIVITIES

WORK PACKAGE NAME: TRAINING ACTIVITIES

Work Package Number: 3.1

Work Package Objectives:

To provide the skills necessary to optimise the work in the HOLISTIC Project and to use the knowledge generated to train others.

PROGRESS TOWARDS OBJECTIVES:

SEI is work package leader for training activities, and has provided guidance to the HOLISTIC Consortium on this matter. A board paper (PB2/7) was presented to the HOLISTIC Project Board in November 2007, and paper outlined the methodology to be followed for this work package. A training proposal form has been developed by SEI, and this form is available on the internal intranet site. The following are the steps involved:

1. The project partner completes the training proposal form
2. The proposal form is sent to the Project Coordinator
3. The Project Coordinator circulates it to the Project Board for approval, as the Board must approve all training proposals.
4. Once final comment has been reached the Project Coordinator will circulate approval to the Proposer.

The methodology to manage this work package is also outlined in the HOLISTIC Project Handbook (outlined in WP4.1).

To date PLAN has proposed three training proposals, and these were accepted by the Project Board in May 2008. The training proposed is:

- Training on heating optimisation,
- Training on building optimisation,
- Training on building retrofitting.

It is proposed that this training will take place in September 2008, and will be open to a large audience in Neuchatel. The training programme will be available to other HOLISTIC and CONCERTO partners.

DEVIATIONS FROM WORK PACKAGE:

There are no deviations from this work package

DELIVERABLES ACHIEVED IN THE YEAR:

There are no deliverables required for this period.

MILESTONES ACHIEVED IN THE YEAR:

M12 – First schedule of training – Completed as discussed and outlined at the May 2008 HOLISTIC Project Board.

2.5 MANAGEMENT OF THE CONSORTIUM

WORK PACKAGE NAME: PROJECT MANAGEMENT

Work Package Number: 4.1

Work Package Objectives:

The objective is to ensure efficient and effective management of the HOLISTIC Project in all its components and in its totality.

PROGRESS TOWARDS OBJECTIVES:

This is a large and complex project with 24 partners and 40 work packages, and to date project management has been successful. The management activities are outlined in the points below:

1. CONSORTIUM MANAGEMENT:

COMMUNITY STEERING GROUPS (CSG): A CSG has been set up in each community. They have been established to oversee the day-to-day progress of the work in each of the three communities and to help drive it forward. The Chair of each CSG is also a member of the Project Board. Details are outlined in deliverable 45. A Community Project Manager (CPM) has also been appointed for each community, and the CPM will act as secretary for the CSG.

CSG meetings will be held regularly, every two or three months or as required by local circumstances. All meetings will be subject to a documentation process comprising prior circulation of an Agenda and supporting papers and circulation of minutes to members and the Project Coordinator within 21 days of the meeting.

CPMs have responsibility for day to day oversight of HOLISTIC activities within their Community. They are also responsible for ensuring the submission of all necessary reports etc from partners in their Community to the Project Coordinator and act as a communication channel between the Project Coordinator and partners in the Community.

To allow for effective management of the Project the Coordinator organises bimonthly conference calls between the Coordinator and CPM. On occasion ad-hoc conference calls will be held to drive a particular work package forward.

DUNDALK: In November 2006 Dundalk launched its CSG and it comprises of a mix of public and private partners. It is chaired by a representative from LCC, and SEI acts as secretariat. The Dundalk group meets on a bimonthly basis, and at its meeting in November 2006 it adopted a project management process for the Dundalk community. This process can be outlined in the following diagram, where the diagram outlines the following:

- Targets have been set for the Dundalk SEZ, and they must be achieved by 2010.
- To achieve these targets the work packages must be managed – this is done via the CSG, and several Action Groups who drive forward specific tasks. The Action Groups (AG) are ESCO AG, Built Environment AG, Socio Economic AG, Communications AG, DSM AG, HOLISTIC AG and Industry AG.
- The Action Groups then ensure each work package follows the recognised management process.
- This allows for a project plan to be created.

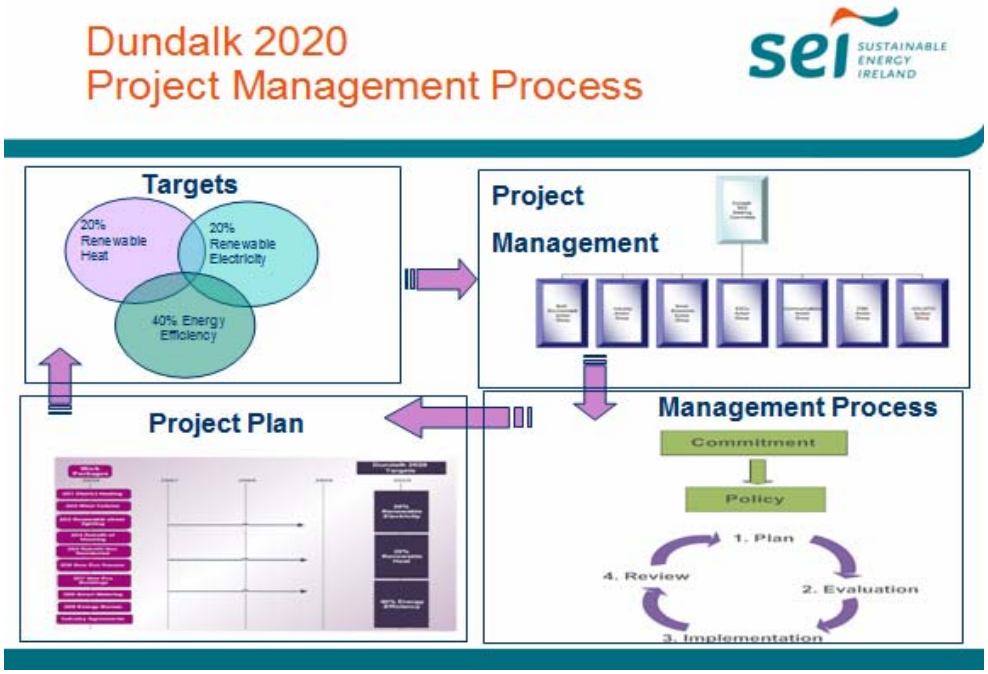


Figure 40: *Project Management Process for Dundalk Community*

MÖDLING: The Community Project Manager provides guidance to the Community Steering Group (CSG) and prepares particular milestones for each Work Package in Mödling. CSG meetings are established on a 2 monthly basis with relevant local actors. The progress of the project has been regularly monitored and reported through the provided quarterly and yearly reports as well as through presentations on the three Project Board meetings. Reports are submitted to the Coordinator in a timely and efficient manner, which contributes to the overall successful implementation of the Project.

NEUCHÂTEL: PLAN is the central point for the Swiss partners is this project. The coordination consists of communication to all partners. At the beginning of the project, rules regarding the project were communicated and the Project Handbook was introduced and explained to all Swiss partners. The CSG meetings take place on a quarterly basis in Neuchatel. The goal of each meeting is to give all partners a global overview of the progress made in each WP of the holistic project, to answer questions which may arise, to communicate information from other communities or from the coordinator. Reports have been submitted as required to the Coordinator, and indeed to manage and maintain strategic involvement such a global Project local controls have been implemented.

PROJECT BOARD: The Project Board has the role of overseeing progress across HOLISTIC. Two designated PB members have been agreed from Ireland, Switzerland and Austria. Individual PB members will be responsible for representing all participants from their countries. Representatives of MATT (IT), Newry (UK) and Aachen (DE) will be entitled to attend all meetings. Work package leaders attend meetings of the PB at the invitation of the Coordinator.

To date the Project Board has met on three occasions. The inaugural meeting was held in **DUNDALK** on the 29th of June 2007. At this meeting 7 Project Board papers were presented and they were:

PB1/ 1 – Welcome and introductions

PB1/2a – The Role and membership of the Project Board

PB1/2b – Project Board Management

PB1/2c – Review of the Consortium Agreement

PB1/3a – The contract

PB1/3b – Annex I

PB1/3C – Annex II

The second Project Board was held in **NEUCHÂTEL** on the 28th and 29th of November. At this meeting 6 Papers were presented and they were:

PB2/2 – Modelling

PB2/3 – Project Handbook

PB2/5 – Concerto Plus

PB2/7 – Training

PB2/8 – Contract Amendment

PB2/10 – Pre-financing

In addition to the above the 3 communities and 3 observer communities presented an update on their work packages. The Project Coordinator introduced the `traffic light system' to the Board. This system indicates whether work packages are on schedule or whether difficulties in meeting milestones and/ or deliverables were foreseen. The 'traffic light system' will be used as a risk assessment process within HOLISTIC, and has the following description:


No further risk identification required


Medium risk - identify the risk and mitigation measures. The risk identification tool can be used.


High risk - identify the risk and mitigation measures. The risk identification tool can be used.

The third Project Board was held in **MÖDLING** on the 27th and 28th of May. At this meeting only 1 Board Paper was presented and it was:

PB3/1 – Annual Report in context of work package review

The emphasis of this Project Board was to review all the work packages of the 3 communities in detail. Where significant contract amendments were required the Board were requested to endorse – this occurred without objection. To provide more structure to the Project Board meeting the concept of discussion facilitators was introduced. Two persons were nominated to lead discussions on a community, and the facilitators were independent of that community. This was extremely successful.

On each occasion the Project Board Agenda was formulated by the Project Coordinator in consultation with the three CPM and Chairman of the Project Board. In addition each CPM organised excellent logistics for their respective communities. In time it is envisaged that the Board will develop and adapt to the requirements of the Project.

PROJECT HANDBOOK: The Project Coordinator developed a Project Handbook for all partners in the HOLISTIC Consortium. This handbook is designed to help everyone involved move HOLISTIC forward efficiently and effectively, fully satisfy the requirements of the European Commission and enable partners to work together towards a successful project conclusion. The Handbook is the first place to look for information on any aspect of the administration of the project and covers coordination processes internal to HOLISTIC and the European Commission's requirements for all FP6 projects of this type. The structure and contents of the Handbook are:

- Chapter 1 - HOLISTIC Management Cycle
- Chapter 2 - The Contract (Introduction, Consortium Agreement and Contract Amendment)
- Chapter 3 - Performance of the work (the work packages, milestones, deliverables and CSG)
- Chapter 4 - Reporting (Annual reporting, Interim reporting, audit certificates and financial issues)
- Chapter 5 - 18-Month Plan
- Chapter 6 - Training
- Chapter 7 - Knowledge Management
- Chapter 8 - CONCERTO Plus (Dissemination, Guidelines for Project Reporting, Technical and non-technical analysis)
- Appendix 1 - Glossary of Terms
- Appendix 2 – FAQ on FP6 Projects
- Appendix 3 - 60-month reporting schedule
- Appendix 4 - FP6 Commission report guidance
- Appendix 5 - Audit certificate guidance notes
- Appendix 6 – Example time sheet
- Appendix 7 – Interim reporting forms
- Appendix 8 – Risk identification and assessment (tool)
- Appendix 9 – Forms and templates
- Appendix 10 – Monitoring Guidelines.

All partners received a hard copy of the Project Handbook, and when revisions are made to the Handbook partners will be notified electronically and revised copies downloaded from the HOLISTIC intranet site.

FIRST ANNUAL REPORT: SEI developed a 9-page guidance document on the requirements of the first annual report. The guidance was provided to the three CPM, who in turn provided it to partners in their communities. The purpose of the guidance was to provide a framework on which the following could be completed and returned to the Commission in a timely fashion:

- Contract amendment with revised 18-month plan
- Annual Activity reporting
- Annual Management reporting

In addition SEI developed standardised templates which the partners are to utilise.

2. CONTRACTORS:

To date the HOLISTIC Project has had a good working relationship with the Commission, and evidence of this can be seen in Addendum I to the HOLISTIC contract. The Coordinator with the support of all partners submitted a request for evolution of the Consortium. This was to allow the HSE be introduced as a partner to fulfil obligations in WP2D5. The HSE was accepted as partner 24 to the Consortium with no objections from the Commission.

3. PROJECT COORDINATION:

The HOLISTIC Project is been coordinated by SEI and SEI has worked with the HOLISTIC Project Board and CPMs to ensure the project continues to move forward. There has been effective internal coordination but SEI has also worked with other CONCERTO projects and organisations to share information on sustainable energy communities.

See Project Timetable:

PROJECT TIMETABLE:

No.	Work package title	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60
1.1	Socio economic research																				
1.2	Modelling																				
1.3	Analysis of HOLISTIC actions																				
1.4	Policy Analysis																				
1.5	Aerial thermograph																				
1.6	Smart heating control																				
1.7	Electricity storage																				
2.D1	District heating																				
2.D2	Wind Turbine																				
2.D3	Street lighting																				
2.D4	RUE- housing																				
2.D5	RUE- non residential																				
2.D6	New eco-houses																				
2.D7	New eco buildings																				
2.D8	Metering																				
2.D9	Energy Bureau																				
2.M1	RES & storage																				
2.M2	Solar Energy																				
2.M3	Bioenergy CHP plants																				
2.M4	Energy efficiency in buildings																				
2.M5	New Eco-buildings																				
2.M6	Load balancing																				

2.M7	Impact assessment
2.N1	Wind & PV
2.N2	Hydropower plants
2.N3	RUE/ RES for district heating
2.N4	Retrofit of dwellings
2.N5	Retrofit of University buildings
2.N6	Retrofit of swimming pool
2. N7	Energy savings at hospital
2.N8	New eco buildings
2.N9	Buildings optimisation
3.1	Training
4.1	Project Management
4.2	Knowledge Management
5.1	HOLISTIC dissemination
5.2	Ireland
5.3	Austria/Aachen
5.4	Switzerland
5.5	Italy

DEVIATIONS FROM WORK PACKAGE:

No deviations.

DELIVERABLES ACHIEVED IN THE YEAR:

Deliverable 45 – Establishment of the Project Board and Community Steering Groups – submitted to the Coordinator

MILESTONES ACHIEVED IN THE YEAR:

M2 – Project Board and Community Steering Groups established - complete

M6 – Project intranet operational - complete

WORK PACKAGE NAME: KNOWLEDGE MANAGEMENT

Work Package Number: 4.2

WORK PACKAGE OBJECTIVES:
The objective of the work package is to ensure real exchange of knowledge between the communities, and that the knowledge already existing in the communities plus lessons learnt from the project are shared by all the partners, especially with regard to technology.

PROGRESS TOWARDS OBJECTIVES:

Good progress has been made on this work package and deliverable 46, that is an operational project intranet, has been delivered to the Consortium. To progress this work package SEI developed a project management team internal to SEI. This team included the IT department and SEI staff dedicated to the HOLISTIC project. It was necessary that the requirements of the system were defined, and a two tiered approach was taken:

(1) Develop an intranet to meet the needs of all HOLISTIC partners, and

(2) Develop a task management system for the Dundalk community

The Dundalk system was developed to meet the needs of the project management structure in the Dundalk community, where this structure is comprised on an overall Dundalk Community Steering Group, with action/ task groups working beneath this structure to deliver on the work programme.

The Dundalk intranet operates in a seamless parallel with the overall HOLISTIC intranet, and through project development the needs of the Dundalk system enhanced the HOLISTIC product. The software package chosen was Sharepoint. Sharepoint is a user-friendly, intuitive programme which can be easily used in conjunction with other Microsoft applications such as word or excel. As English is not the mother tongue for many of the HOLISTIC partner the user-friendly/ intuitive aspect is important. The functions of the HOLISTIC intranet include:

- A document library,
- A photo library
- Discussion Board
- Calendar
- Project Plan, and
- Action items

PARTNERS: All of the above was delivered via consultative process with the Community Project Managers of Mödling (Austria) and Neuchâtel (Switzerland). However SEI is the work package leader for this work package.

DEVIATIONS FROM WORK PACKAGE:

No deviations

DELIVERABLES ACHIEVED IN THE YEAR:

Deliverable 46 – Project Intranet delivered and submitted to the Coordinator

MILESTONES ACHIEVED IN THE YEAR:

M6 – Project intranet operational with information exchange between partners

2.6 OTHER ISSUES

There are no other issues to report on for this period.

Annex A: Dissemination Articles

TABLE 1: LIST DISSEMINATION ACTIVITIES:

DATE	TITLE OF EVENT	PARTICIPANTS	RELEVANT WP	DESCRIPTION	LEAD ORGANISATION	STATUS	RESPONSE
01 June 2007	Community Event in Dundalk to launch HOLISTIC Project	HOLISTIC Project Board and Dundalk community stakeholders	5.2	This event launched the HOLISTIC Project with all the project partners and Dundalk stakeholders. The 3 communities presented an overview of what they hope to achieve over the next 60 months	SEI	Complete	Positive response with a high attendance.
June 2oo7	Internet	International	5.2	Creation of a website for the Dundalk community, www.sei.ie/dundalk2020	SEI	Complete	This generates good response at local, national and international level.
04 July 2007	"Dundalk will showcase sustainable energy"	Local Dundalk community	5.2	Article in the local Dundalk Democrat newspaper outlining the HOLISTIC Project in Dundalk	SEI	Complete - article in Annex	Stimulated local interest
11-Sep-07	Italian Regional site visit	Italian Concerto Communities	5.1	Present to the Italian Concerto Communities on the HOLISTIC Project and the Italian Ministry of the Environment involvement	SEI	Complete	This created positive feedback for MATT and their involvement in HOLISTIC.

19-Sep-07	"Green wind blows through Dundalk"	Local Dundalk community	5.2	Article in the local Argus newspaper outlining the HOLISTIC Project in Dundalk	SEI	Complete	Stimulated local interest
03-Oct-07	Dundalk democrat			Story on launch of Carlinn Hall which incorporates D2020	SEI	Complete	Stimulated local interest
10-Oct-07	Argus newspaper			Story on launch of Carlinn Hall which incorporates D2020	SEI	Complete	Stimulated local interest
20-Oct-07	Corporate social responsibility awards	Local Dundalk business community	5.2	SEI sponsored a the sustainable energy element of the CSR awards for local business	SEI	Complete	Recognition of the sustainable energy for the local business of Dundalk
28-Oct-07	Article in Sunday Tribune	National	5.2	Article ref the 2020 vision for Dundalk			
01-Nov-07	Town Hall meeting for residents of social housing	Low income housing Dundalk	5.2	An evening event was held to make homeowners in low-income homes aware of refurbishment and smart meters programme	SEI	Completed	There was a low turn out for this event but residents received a positive message on the HOLISTIC Project, and provided an opportunity for Project team to maintain contact

Dec-07	Dundalk 2020 Charter 1 year on	Dundalk stakeholders	5.2	This event recognised the Dundalk community had signed a Charter one year previously. This event gave an opportunity to outline achievements made in the year and activities planned for the coming year.	SEI	Completed	Very positive response, and it allowed participants feel part of a significant project.
Jan-08	Dundalk Sustainable Energy Community Project – a platform for regional sub development	International Centre for Local and Regional Development		Meeting with ICLRD to consider how the HOLISTIC concept could be replicated throughout Ireland, and how such a model could assist in Regional development	SEI	Completed	Very positive input from ICLRD and constructive approach to rolling out concept through out Ireland
28-Feb-08	Making the Town the first sustainable in the country – all about different groups working together.	Local Dundalk community	5.2	Article in the local Argus newspaper outlining the HOLISTIC Project in Dundalk	SEI	Complete	Stimulated local interest

09-Apr-08	On the Irish Coast, Reconsidering Energy From the Town Up - Article in the New York Times	International	5.2	An article appeared in the New York on the sustainable energy zone in Dundalk, and outlined work in Modling and Neuchatel	SEI	Completed	This article had an international audience of over 22 million, and created very good exposure for HOLISTIC and CONCERTO
10-Apr-08	Retrofit of housing	Agency	5.2	Meeting with the Northern Ireland Housing Exective who are interested in working with SEI on addressing the retrofitting of existing housing stock	SEI	On going discussions	Positive
11-Apr-08	Green Party conference	National	5.2	Presentation to Green Party Councillors on HOLISTIC, and in particular work which was being carried out in Dundalk SEZ	SEI	Completed	Stimulated good interest with Green Pary Councillors.
11-Apr-08	Southern and Regional assembly	National	5.2	Presentation to Southern Regional Assembly on Dundalk community, as Assembly are interested in having other sustainable energy zones created through out Ireland	SEI	Completed	Good contact with Assembly Officers, who are willing to assist SEI roll out other SEZ around Ireland
01-May-08	El Pais Newspaper	International	5.1	The New York Times article was picked up by El Pais newspaper	SEI	Completed	

19-May-08	SERVE Project	National	5.2	Present at Conference on Sustainability organised by the SERVE Project	SEI	Completed	Stimulated good interest and created a closer working relationship with other Irish CONCERTO Project.
March 2008	Publication of Brochure	Local, national and International	5.2	Reprint of the Dundalk Community Brochure	SEI	Completed	This brochure has stimulated much positive response
Feb 2008	Design of logo	Consortium, European Commission and International	5.1	A logo to identify the HOLISTIC Project	SEI	Completed	Positive feedback on the logo
Apr. 2008	Meeting	National	5.2	Parma Developments who are interested in developing sustainable communities in counties Waterford and Kilkenny.	SEI	On going discussions	Positive
Oct. /Dec. 2007	3rd/4th CSG	Local authorities and communal servants	WP 2M4 and 2M5	Collating relevant information for the development of Mödling' s dissemination plan	FHWN	Completed	There was low participation from the community, but those who attended are active committed to the tasks
Oct. 2007 /Feb. 2008	Articles	Members of all political parties in Mödling	WP5.3 & all vertical WPs	Providing general information about the project	MÖD	Completed	

Oct. 2007	Interviews	More than 240 citizens of Mödling	WP1.1, 5.3 & all vertical WPs	Providing general information about the project and conducting Face-to face interviews	FHWN	1st survey completed	Collating relevant information for the development of Mödling' s dissemination plan
Feb. – Apr. 2008	Articles	Readers of the regional press	WP5.3 & all vertical WPs	Providing general information about the project and measures foreseen in 2008	FHWN & MÖD	Completed	
Apr. 2008	Internet	Readers of the regional press	WP5.3 & all WPs	Providing regularly updated information about the project	FHWN	Online	Access of Mödlings' citizens to www.holistic-moedling.at
May-08	Press Conference	Regional and national print media	WP5.3 & all vertical WPs	Providing general information about the project and in particular about the PB meeting	MÖD	Completed	Articles published
May-08	Large CSG event	Town council, social actors & HOLISTIC project partners	WP5.3 & all WPs	Providing insights about HOLISTIC in all partner communities	MÖD	Completed	Press release published, active commitments to Mödlings' tasks
Nov-07	Articles in several swiss news paper (L'express, le temps)	P. Bonhôte/J. Hars	All	Global information about the project	Planair	completed	
Nov-07	TV	P. Bonhote	All	Global information about the project	Planair	completed	

Nov-07	Radio (swiss and local radio)	P. Bonhote	All	Global information about the project	Planair	completed	
Oct-07	Articles in the city Newspaper		All	Global information about the project	Planair	completed	this news paper is read by 80% of the inhabitants of the city
Nov-07	Meeting	inhabitants of the city of neuchâtel		Global information about the project	Ecoparc	completed	low
Oct-07	letter	all inhabitants of the Holistic zone	All	Global information about the WP	Planair/Eco parc	completed	
Feb-08	TV	Ville de Neuchâtel	WP 1.5	Information about the Thermography on the french speacking chanel of swiss television	Ville de Neuchâtel	completed	
Feb-08	Articles in the city newspaper	Ville de Neuchâtel	WP 1.5	Information about the Thermography	Ville de Neuchâtel	completed	

Wednesday July 4 2007 The Dundalk Democrat

Dundalk will showcase sustainable energy

By Gary McLaughlin

SUSTAINABLE Energy Ireland launched its big plans for Dundalk last Thursday night in DkIT. Dundalk is set to benefit from a €3.4m grant that will transform part of the town.

The Dundalk Sustainable Energy Zone (SEZ) spans a four-square kilometre area, stretching from the hospital and Hoey's Lane to the Fairways Hotel and from Blackrock Road to Mullagharlin Road.

Dundalk is leading the project in with two other communities in Austria and Switzerland. The project aims to show cities and towns around Europe how to use different energy technologies and techniques in an intelligent and integrated way.

The Holistic Dundalk 2020 project hopes to transform the town by the time 2020. By then Dundalk SEZ will work towards achieving three main aims.

By 2020, energy efficiency in selected residental, industrial and commercial buildings in the zone will have improved by 40%.

At least 20% of all energy used to heat homes and businesses within the zone will be generated by renewable sources and at least 20% of all electricity used by businesses within the zone will be generated by renewable sources.

Head of Dundalk 2020, Declan Mealy outlined how the plans will work and what changes will be in store for the town. In a presentation seen by many members of Dundalk Town Council and Louth County Council, Declan said:

"Today we have the new turbine and the Ice Dome, which is one of the most efficent users of energy in the town. The Crowne Plaza Hotel and various schools and partners are also signing up with us in a bid to be more energy efficient.

"Dundalk 2020 is all part of a bigger picture and that is building towards a sustainable community. The groundwork has now been done but the real hard work now begins."

From the presentation, the scheme looks to make new homes being 40% more efficient than conventional houses. Existing low income houses will be refurbished to 40% higher energy efficiency standards than they are currently.

A second wind turbine is planned for the SEZ which will generate renewable electricity for industry in the zone along with new street lights powered by a combination of solar panels and micro wind turbines.

The plan also incorporates Dundalk SEZ working with industry and schools on projects as well as the use of advanced meters in homes to allow greater understanding of energy which will lead to potential savings in the home.

Dundalk was chosen by SEI and the EU because they believed it could be a role model for towns and communities throughout Europe.

Speaking at the launch, SEI CEO David Taylor thanked Minister for Foreign Affairs, Dermot Ahern and former DkIT director Tom Collins for helping persuade SEI to come to Dundalk.

David said: "Dermot and Tom encouraged us to come here because of Dundalk's committment to the

Declan Mealy of SEI, Cllr Jim D'Arcy Chairman Dundalk Town Council, David Taylor CEO SEI, Joe McCarthy President of Dundalk Chamber of Commerce, Larry Staudt DkIT Renewable Energy Centre at DkIT at the SEI contract signing

http://www.dcmnr.gov.ie/Press+Releases/Dundalk+is+model+for+greener+living+%E2%80%93+Minister+Eamon+Ryan.htm

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Dundalk is model for greener living – Minister Eamon Ryan

New housing development show green building regulations are achievable for the industry and desirable for consumers

Dundalk, 5 October 2007

Minister Eamon Ryan today visited Dundalk - Ireland's first sustainable energy community.

There the Minister visited the Sustainable Energy Ireland offices. SEI co-ordinate the Dundalk 20/20 project, which acts as a pilot for the rest of the country. In a 4 km zone in the centre of the town, 20% of all heat and 20% of all electricity must come from renewable sources by 2010. This is ten years ahead of the Government target.

The Minister also officially launched Ireland's most eco-friendly development of smart homes at Carlinn Hall. This is the first residential development in the Dundalk 20/20 sustainable energy zone.

Speaking at the launch the Minister said:

Dundalk is clearly and successfully leading the way in sustainable development in Ireland. It shows us that by working together across a community, people can and are making the choice to switch to greener energy, to greener homes and to greener living.

The Carlinn Hall development will enable these home owners to reduce their carbon footprint by 70% and enjoy much lower running costs. Most importantly, this development demonstrates that the new Building Regulations recently announced by Minister Gormley are eminently achievable for the industry. They are equally desirable to the discerning consumer.

Savings from energy efficiency will considerably outstrip initial costs. The fact that Dundalk 2020 building standards will soon be national means vastly increased competition in renewable energy technology. This will serve to decrease installation costs even further.

The Carlinn Hall development is the way of the future. It represents canny cost-effectiveness with due regard for the environment. I would urge the construction industry to embrace this seed change in housing and energy policy.

Dundalk is a template for every Irish town and city. The people of Dundalk are leading the green revolution making it a European centre of excellence in sustainable development. I would like to see this replicated across the country.

The New York Times

Technology

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On the Irish Coast, Reconsidering Energy From the Town Up

Steven R. Knowlton for The New York Times

SELF-CONTAINED A wind turbine dominates the Dundalk Institute of Technology.

By KAREN FREEMAN
Published: April 9, 2008

DUNDALK, Ireland

WHEN the fearsome Cuchulainn was transformed by the rage of battle into a Celtic Incredible Hulk, according to Irish mythology, the warrior's intensity melted snow for 30 feet around him. That was an impressive generation of alternative energy from this Achilles-like hero so closely associated with Dundalk, but this town on Ireland's east coast is turning to less ephemeral kinds

Steven R. Knowlton for The New York Times
Lawrence Staudt is director of the college's Center for Renewable Energy.

Steven R. Knowlton for The New York Times
Michael McNally on the cooling tower at the H. J. Heinz plant, where he is utilities supervisor.

of power as it tests technologies to reduce the country's thirst for fossil fuels.

The goal is innovation on a local scale, developing clean energy sources and reducing energy demand in a 1.5-square-mile site called a Sustainable Energy Zone. The project is part of a European Union program to encourage pilot projects that can be scaled up to regional or national levels. Dundalk is working with two other towns, in Austria and Switzerland, on a total budget of about $40 million, said Aideen O'Hora, the project manager for Sustainable Energy Ireland, the government agency in charge. But the biggest changes are taking place in Dundalk.

The zone has a bit of everything — an industrial park, a college campus, a high school, a hospital, a hotel, other businesses and two housing developments — in a town of about 30,000 people. The five-year project will be a year old in June, but other initiatives got a head start, and the town of Dundalk is already seeking money for an energy-conscious expansion that could double its size.

Some of the current projects are literally high profile. The first thing a visitor spots is a wind turbine 200 feet high that has dominated the campus of the Dundalk Institute of Technology since 2005. It is the inspiration for an even bigger one that will provide power to Xerox in the industrial park. Self-powered streetlights being tested on the campus and in the industrial park also draw curious looks because their small wind turbines and solar panels make them appear as if they are ready for liftoff.

But most of the work is less obvious or is in the planning stage. For example, a wood-fueled system with a gas boiler backup will deliver heat and hot water to many buildings in the zone through underground pipes. And inside the H. J. Heinz plant, which produces frozen dinners for dieters, clever engineering has put the machinery on an energy diet.

Energy conservation in the zone means improving the insulation for both new and existing homes. And Sustainable Energy Ireland says that by 2010, renewable energy will account for at least 20 percent of the heat in the zone and at least 20 percent of the electricity used by businesses.

That timetable looks overly modest to Lawrence D. Staudt, an American engineer who

moved to Ireland in 1985 while working for a Vermont-based wind-power company that went out of business six months later. Mr. Staudt, now the director of the Center for Renewable Energy at the Dundalk Institute of Technology, says Ireland is ideally suited for wind power because of its perch in the northern Atlantic, and he is eager to see it move ahead.

The limiting factor is Ireland's electrical grid, which is being updated. The winds (and wave-power energy potential) are strongest on the western coast, but the country needs some "big pipes" to carry the power to more populous areas, Mr. Staudt explained.

"Ireland will become an exporter of green electrons," he predicted.

The turbine is the largest commercial wind turbine on a college campus, Mr. Staudt said, and it has cut the college's electricity costs in half. It will pay for itself — the cost was about $2 million — in seven and a half years, he added.

The campus center is also studying the self-powered streetlights that are being imported by Horseware, a horse-blanket company in the industrial park. Ciaran Herr, Horseware's purchasing manager, said he brought some of the lights to the Dundalk plant after seeing them in China. But they have their limits.

"The County Council said they were interested in buying them, but I must guarantee 100 percent light at night," Mr. Herr said. "I can't do that."

If there were four or five short winter days without wind, the solar energy wouldn't be enough, and the two small batteries each streetlight has would run dry. So the lights will be best used in places like parks and remote areas, Mr. Herr said, and a power backup might be added.

The plan for the zone calls for streetlights like these to be installed in Dundalk's industrial park.

At Heinz, energy innovation started with recycling and conservation. Then the engineering staff looked for savings in the refrigeration, compressed air and boiler systems.

A big chunk of Heinz's electricity bill comes from freezing the dinners, said Shane Kearney, the chief engineer. The system uses compressed ammonia. "The greater the pressure, the harder it is to pump," Mr. Kearney said. "We took the pressure down to where the motors didn't have to work so hard. That took 30 percent off the freezing bill in the first year."

Then utilities workers took a critical look at the compressed-air system used to drive machinery and found that fixing leaks quickly made a big difference in costs. "When we plugged the leaks," Mr. Kearney said, "we could drop the third compressor. Turned out it

was there to keep the leaks happy." And the second compressor, said Micheal McNally, the utilities supervisor, now has to work only part of the time.

Heinz's boiler-efficiency project stepped onto disputed ground by installing a C.V.E. (calorific value enhancement) system, which produces a pulsed magnetic field around the pipe carrying gas fuel. How this might make the fuel burn more efficiently has not been proved, and many experts contend that it doesn't work at all. But Mr. McNally said the plant was reaping fuel savings of 4 to 5 percent.

There is more work to do. For example, the heat drawn from the refrigeration apparatus could be used to heat water for cleaning, but the generation of the heat and the cleaning of the plant take place at different times of the day, and the storage of warm water could lead to bacterial growth — unacceptable in a food plant. Still, Mr. McNally thinks a way may be found to do it safely.

Heinz is in the Finnabair Industrial Park, which is named after a daughter of Cuchulainn's rival, Queen Medb. It is an appropriate name — one tale says Finnabair died of shame because of all the men's lives wasted for her sake. For the engineers, technicians and managers in the industrial park and the Sustainable Energy Zone that includes it, waste is still the problem.

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The New York Times

NEGOCIOS & ECOLOGÍA

Frenar el calentamiento global exige ir más allá de las emisiones

Energía desperdiciada

Compromiso irlandés para ahorrar energía

STADT MÖDLING

Woche 22/2008 NÖN

ZUM THEMA

- HOLISTIC: Holistic Optimisation Leading to Integration of Sustainable Technologies in Communities (Ganzheitlich-optimierte Integration nachhaltiger Energietechnologien in Kommunen).
- Das Projekt startete im Juni 2007 in den Städten Dundalk (Irland), Neuchâtel (Schweiz) und Mödling (Österreich).
- HOLISTIC-Ziel in Mödling ist, nachhaltige Energielösungen zu demonstrieren. Es sind vor allem auch jene Projekte berücksichtigt, die die Bürger selbst umsetzen können.
- Bis 2012 sind folgende Energieziele angestrebt: Energieeinsparungen von 10%, Erhöhung erneuerbarer Energien um 15%, CO_2-Emissionseinsparungen von 10%.
- Unter anderem sollen diese Maßnahmen umgesetzt werden: Die thermische Sanierung öffentlicher Gebäude mit einer Nutzfläche von ca. 12.000 m², Um- und Einsetzung energieeffizienter und innovativer Baumaßnahmen und -materialien bei der Sanierung bzw. Neuerrichtung von ca. 10.000 m² privat und gewerblich genutzter Gebäude; Erfolgreiche Vermarktung von umweltfreundlicher Energie aus innovativen Anlagen wie Wind-Wasserkraft-Kombinationen, Holzvergaser- und Biogastechnologien, Kältespeicher und Solarsysteme, Etablierung von Mödling als Vorbildgemeinde für „Klimaschutz, Integration und Innovation", unterstützt durch wirksame Öffentlichkeitsarbeit.

Bürgermeister Hans Stefan Hintner, Stadtrat Paul Wardenich, Wasserwerks-Leiter Fritz Panny und EU-Projektleiter Dr. Michael Heidenreich (l.) mit Vertretern aus Dundalk und Neuchâtel vor dem Mödlinger Rathaus. FOTO: DWORAK

EU-PROJEKT / Vertreter aus Dundalk und Neuchatel beraten derzeit in Mödling über umweltfreundliche Maßnahmen.

Auch Wasser hat Kraft

MÖDLING / Die irische Stadt Dundalk (28.000 Einwohner) ist nicht glücklich. 90 Prozent der Energie muss importiert werden, man ist abhängig. Ergo will man 20 Prozent der Energie aus der Windkraft holen, 20 Prozent der Wärmeversorgung durch das Verbrennen von Biomasse.

Im Neuchâtel (32.000 Einwohner) will man die Bevölkerung so richtig sensibilisieren und zeigen, dass man beim Energie sparen etwas erreichen kann.

Vertreter beider Städte sind derzeit beim HOLISTIC-Partnergipfel in Mödling zu Gast. Und man will sich in Mödling einiges abschauen. Bürgermeister Hans Stefan Hintner verweist unter anderem mit Stolz auf die Biomasse-Anlage der EVN, die mittlerweile drei Viertel der etwa 11.000 Haushalte mit Energie und Wärme versorgt.

„Der Weg ist das Ziel", betont Hintner. Begleitmusik dabei sind auch die „Soft-Faktoren. Vieles in Mödling ist zu Fuß, mit dem Rad oder öffentlichen Verkehrsmitteln erreichbar. Das Projekt soll auch das Bewusstsein stärken, dass und wie man CO_2-Ausstoß senken kann."

Friedrich Panny, Leiter des Wasserwerks, kümmert sich um den aktuellen Mödlinger HOLISTIC-Beitrag.

Turbine statt Druckreduktion bringt jede Menge Energie

Um das Wasser von der Meierwiese in den Tiefbehälter (Prießnitztal) fließen zu lassen, muss der Druck reduziert werden. Dieses Gerät wird nun auf Pannys Initiative hin durch eine Turbine ersetzt, die für etwa 32.000 Kilowatt Energie pro Jahr sorgt. Energie, die fiktiv hochgerechnet etwa 10 Haushalte versorgen könnte, wird ins Netz eingespeist. Das Projekt wird als Schau-Kraftwerk ausgeführt.

Viel beachtetes Turnier. *Bereits zum 5. Mal führt Handicap-Breitensport-Trainerin Gisela Schmitz in Zusammenarbeit mit dem Österreichischen Gebrauchshunde Sportverband Alt Mödling am Trainingsplatz in der Guntramsdorfer Straße 34 das Handicap-Breitensport-Turnier für Menschen mit geistigem oder geistig-körperlichem Handicap durch. Am 1. Juni werden Teams, bestehend aus einem Sportler mit Handicap sowie dem Hundeführer mit seinem Hund in vier Disziplinen (Unterordnung, Hürdensprung, Slalom und Hindernisparcours) ihr Bestes geben.* FOTO: SCHLECHTA

EU-Projekt für nachhaltige Nutzung alternativer Energien

HOLISTIC-Partnergipfel in Mödling

Der weltweite Vorrat an fossilen Energien ist beschränkt und die letzten großen befinden sich zum Teil in politisch instabilen Gebieten. Gleichzeitig steigen die I bisher unerahnte Höhen. Grund genug für die **Europäische Union**, Maßnahmen zukünftig eine möglichst große Unabhängigkeit von fossilen Brennstoffen sicher angedachten Strategie steht eine weitgehend dezentrale und autarke Energiev anstatt großer Energiekonzerne mit zentraler Steuerung. Dafür ist es notwendi durch alternative Energien zu ersetzen und andererseits den **Energieverbrauc reduzieren**.
Ob und wie solche Projekte bestmöglich umzusetzen sind, wird derzeit im Rahn Programme analysiert. Einer davon ist das **HOLISTIC-Projekt**, dem sich auch angeschlossen hat. Weitere Partnergemeinden sind **Dundalk** (Irland) und **Neu** assoziierten Kommunen **Aachen** (Deutschland), **Newry** (Irland) und **Matt** (Ita Den Kern des Projektes bilden Zielsetzungen, die sich die Kommunen selbst da bestimmten Zeitraum erfüllt werden sollen. So hat sich die Stadt Mödling verpf **Prozent an Energie einzusparen**, den Anteil an **erneuerbarer Energie um** die **CO2-Emissionen um 13 Prozent zu reduzieren**. Durch thermische und an öffentlichen Gebäuden aber auch durch die Aufklärung und Motivation Privat erneuerbare Energien und das Bewusstsein zum sparsamen Umgang mit Resso "Wir müssen viele unterschiedliche Strategien zur Nutzung erneuerbarer Energi unser Bewusstsein für die Erschließung von neuen Energiequellen schärfen", sa **Michael Heidenreich** Handlungsbedarf für die Zukunft.

Energie nutzen, wo sie von selbst entsteht!

Das derzeit in Errichtung befindliche Trinkwasser-Kleinkraftwerk des Mödlinger Denkansatz lebendig vor Augen. Das Kleinkraftwerk macht sich nämlich jene En Wasserleitung zwischen der Meierei-Wiese und dem Hochbehälter Prießnitztal zu Höhenunterschied von rund 80 Metern und den Einsatz einer Turbine können jä werden. Das entspricht umgerechnet jener Energiemenge, die notwendig ist, u **ein Jahr lang mit Strom zu versorgen**. "Bisher mussten wir im Zuge einer C vernichten", freut sich Projektinitiator Baudirektor-Stellvertreter **Fritz Parny** ü Ökostrom.

HOLISTIC-Partnergipfel in Mödling

Am **27. Mai 2008** trafen einander die Partnergemeinden des HOLISTIC-Projekt Mödling, Bürgermeister LAbg. **Hans Stefan Hintner** und STR Mag. (FH) **Paul** Vertreter der europäischen Kommunen und wünschten den Teilnehmern eine e berichteten die Vertreter der Kommunen über ihre eigenen Ziele und die bisher "Irland ist im Unterschied zu anderen europäischen Ländern zu 90 Prozent von abhängig. Deshalb müssen wir rasch Gegenstrategien entwickeln. Die Stadt Du ganz Irland ein Prototyp, wie der Umstieg auf erneuerbare Energien gelingen k die zentrale Bedeutung des HOLISTIC-Projektes für den Inselstaat.
"Die Stadt Mödling hat in der Vergangenheit bereits viele Anstrengungen zur O Energiewirtschaft unternommen. So konnten der Energieverbrauch in zahlreich Stadtbad Mödling durch Energie-Contracting Maßnahmen gesenkt werden. Ein alternativer Energien war die Inbetriebnahme des **Biomasse-Heizwerkes** der Mödlinger Warmwasserversorgung bestritten wird. Darüber hinaus bieten wir a umriss Stadtchef Hans Stefan Hintner die Bemühungen der Stadt Mödling. "Als Projekt wollen wir den eingeschlagenen Weg weitergehen und", so Hintner.

Neben dem Trinkwasser-Kraftwerk sind thermische Maßnahmen im Zuge des A
Mödlinger Kindergärten die nächsten Projekte im Reigen der Maßnahmen zur E
Nutzung erneuerbarer Energiequellen.

Bild 1: Bürgermeister Hans Stefan Hintner (m.) mit STR Paul Wenderich (r.), G
Projektkoordinator Michael Heidenreich (l.) sowie den europäischen Projektpart

Bild 5: Besuch beim Hochbehälter im Prießnitztal: Vizebürgermeister Andreas F
Fritz Panny und STR Silvia Drechsler und die Vertreter der Partnergemeinden n
Strom für umgerechnet zehn Mödlinger Haushalte erzeugen wird.

Fotonachweis

Mödlinger
STADTNACHRICHTEN

An einen Haushalt. INFO.WAL Entgelt bezahlt

Amtliche Mitteilung der Stadtgemeinde Mödling Nr. 03/08

umwelt sondernummer

Aktion Verkehrsparen Wienerwald

Mödlings Kinder sammelten fleißig „Grüne Meilen"

Am 26. Februar wurden jene Kindergartengruppen und Schulklassen ausgezeichnet, die im Rahmen einer Aktion von „Verkehrsparen Wienerwald" am fleißigsten „Grüne Meilen" gesammelt hatten. Grüne Meilen gab es für alle Schul- und Freizeitwege, die auf umweltfreundliche Weise - also zu Fuß, mit dem Fahrrad oder mit öffentlichen Verkehrsmitteln - zurückgelegt worden waren. Vizebürgermeister Andreas Hölzmann, Schul-Stadträtin Verena Schwendemann und Franz Gausterer von „Verkehrsparen Wienerwald" überbrachten den fleißigsten unter den kleinen UmweltschützerInnen einen Scheck für die Klassenkassa. Hier im Bild: Die „Drachengruppe" des Kindergartens Haydngasse mit Leiterin Gudrun Paul.

Alle weiteren Siegerklassen finden Sie auf Seite 16!

EU-Energie Projekt: Holistic S. 2, 3 und 15

Kläranlage: EMAS-Zertifikat S. 5

Beetgestaltung: Neues Stadtgrün S. 8 und 9

Öko-logisch Putzen S. 13

4 Fragen zum Thema „HOLISTIC"

Was ist „CONCERTO"?
Die EU-Initiative „Concerto" zielt auf eine nachhaltige Energieversorgung auf Basis lokal verfügbarer erneuerbarer Energiequellen ab. Einen Schwerpunkt bildet die Demonstration innovativer Technologien innerhalb festgelegter geographischer Gebiete unter Berücksichtigung aller relevanten Akteure des jeweiligen Marktes.

Was bedeutet „HOLISTIC"?
Holistic steht als Abkürzung für Holistic Optimisation Leading to Integration of Sustainable Technologies In Communities (übersetzt in etwa: Ganzheitlich-optimierte Integration nachhaltiger Energietechnologien in Kommunen).

Wer ist an dem Projekt „HOLISTIC" beteiligt?
Das Projekt startete im Juni 2007 in den Städten Dundalk (Irland), Neuchâtel (Schweiz) und Mödling (Österreich). Assoziierte Städte sind Aachen (Deutschland), Newry (Irland) und Matt (Italien).

Was ist das Ziel von „HOLISTIC" in Mödling?
Ziel ist es, in der Stadt nachhaltige Energielösungen zu demonstrieren. Energieeffizienz und erneuerbare Energiequellen sollen wirtschaftlich effizient integriert werden und in Zukunft hochwertige Energiedienstleistungen liefern. Es sind vor allem auch jene Projekte berücksichtigt, die die Bürger Mödlings selbst umsetzen können.
Bis 2012 sind folgende Energieziele angestrebt:
- Energieeinsparungen von 10%;
- Erhöhung erneuerbarer Energien um 15%;
- CO_2-Emissionseinsparungen von 10%;

Welche Maßnahmen sollen umgesetzt werden?
- Die thermische Sanierung öffentlicher Gebäude mit einer Nutzfläche von ca. 12.000 m², um die Energieverbrauchskosten zu senken;
- Die Um- und Einsetzung energieeffizienter und innovativer Baumaßnahmen und -materialien bei der Sanierung bzw. Neuerrichtung von ca. 10.000 m² privat und gewerblich genutzter Gebäude;
- Die erfolgreiche Vermarktung von umweltfreundlicher Energie aus innovativen Anlagen wie Wind-Wasserkraft-Kombinationen, Holzvergaser- und Biogastechnologien, Kältespeicher und Solarsysteme
- Etablierung von Mödling als Vorbildgemeinde für „Klimaschutz, Integration und Innovation", unterstützt durch wirksame Öffentlichkeitsarbeit

Diese Maßnahmen sollen in enger Zusammenarbeit mit den zukünftigen Nutznießern erreicht werden.

Europa zu Gast in Mödling

HOLISTIC-Partnergipfel

Ein wichtiger Bestandteil des HOLISTIC-Projektes ist der Wissensaustausch und die Vertiefung der Zusammenarbeit der Partnergemeinden, die sich am 27. und 28. Mai 2008 in Mödling zu einem HOLISTIC-Gipfel treffen werden. Interessierte Bürgerinnen sind am 27. Mai zu einer Informations- und Festveranstaltung in der Feuerwehr Mödling geladen.

Zu den Partnergemeinden zählen Dundalk, Neuchâtel und Mödling sowie auch die assoziierten Partner aus Aachen, Newry und vom italienischen Umweltministerium. Zu diesem Zweck des Wissensaustausches treffen die europäischen Partner einander halbjährlich. Nach den Partnergipfeln in Dundalk und Neuchâtel im letzten Jahr ist die Stadtgemeinde Mödling am 27. und 28. Mai 2008 der nächste Gastgeber.
Neben dem Partnertreffen am ersten Tag im Rathaus und den „Technical Tours" zu den Vorzeigeprojekten am zweiten Tag findet am Dienstag, dem 27. Mai 2008, von 18.30-19.45 Uhr, im Vortragssaal der Mödlinger Feuerwehr am Schulweg, eine auch für interessierte Mödlinger Bürgerinnen offene Großveranstaltung statt.
Im Rahmen dieser Veranstaltung wird auch der HTL-Mödling für die Energieoptimierung in Europas größter Schule die „Ehrenplakette der Stadtgemeinde Mödling für besondere Leistungen auf dem Gebiete des Umweltschutzes für das Jahr 2007" verliehen.
Im Rahmen der „Technical Tour" werden u.a. das Passivenergie-Bürohaus von „Sol4" in der Guntramsdorfer Straße mit seiner Photovoltaikanlage bzw. -fassade und das EMAS-zertifizierte Wasserwerk in der Quellenstraße, in dessen Nähe ein Trinkwasserkraftwerk errichtet werden soll, besucht.

Im Rahmen des HOLISTIC-Partnergipfels wird auch das Passiv-Bürogebäude „SOL4" an der Guntramsdorfer Straße besichtigt werden. *Foto: Thomas Kirchner*

Umweltreferat, Pfarrgasse 9, Tel. 02236/400 DW 75, e-mail: umwelt@moedling.at

Neu - Innovativ - Nachhaltig - Bewegend

HOLISTIC - Ein EU-Projekt stellt sich vor

Als eine der Partnergemeinden des EU-Projektes „HOLISTIC" beschreitet Mödling auch auf dem Gebiet der effizienten Energienutzung neue Wege. Von der Konzeptentwicklung über die Marktforschung und Öffentlichkeitsarbeit bis hin zur Realisierung sollen in vier Projektschritten Maßnahmen zur nachhaltigen Nutzung von Energie umgesetzt werden.

Am Beginn der Konzeptentwicklung für Mödling stand eine Analyse der Wünsche an die künftige Energie-Versorgung und der ökonomischen Potentiale. Dazu wurden unter anderem die Ergebnisse des 2003 erstellten Mödlinger Energiekonzeptes und bereits realisierte Maßnahmen wie die Errichtung des Biomasse-Heizwerkes oder die Energie-Contracting Maßnahmen der Gemeinde erfasst.

In einer Art Brainstorming wurden mögliche für Mödling relevante Themen erfasst und zur Diskussion gestellt: Die Errichtung eines Trinkwasserkraftwerkes, die energetische Nutzung von biogenen Abfällen (Holzvergaser für Gas- und Stromerzeugung oder Biogas aus Klärschlamm etc.), der Bau von Windkraftanlagen auf den Arealen von Kläranlage und Trinkwasserpumpwerk in Moosbrunn, die thermische Sanierung von öffentlichen Gebäuden, der Einsatz von erneuerbaren Energien insbesondere bei Neubauten oder ein neues Förderungsszenario der Gemeinde für Alternativenergieanlagen und Energiesparmaßnahmen von privaten Hauseigentümern.

Studierende der Fachhochschule Wr. Neustadt/Standort Wieselburg führten im September 2007 eine Umfrage in der Mödlinger Fußgängerzone zum Thema „Klima und Energie" durch.

Marktforschung

Laut den Auswertungen der Ergebnisse erkennen praktisch alle Bürger in Mödling die globale Erwärmung als ernstes Problem, und über 90% sind der Auffassung, dass der Klimawandel ein erhebliches Problem für nachkommende Generationen darstellen wird.

Über 75% der Befragten sind der Meinung, dass eine sinnvolle Lösung des Klimaproblems nur dann erreicht werden kann, wenn alle aktiv zum Klimaschutz beitragen. So werden laut Umfrage regionale, erneuerbare Energiequellen wie beispielsweise die Nutzung der Sonnenenergie, der Wasserkraft oder des Biogases deutlich befürwortet. Die Befragung hat außerdem ergeben, dass nur 25% der befragten Personen ihren eigenen Energieverbrauch kennen. Dies weist auf ein Energieeinsparpotential hin, welches durch bewusstseinsbildende Maßnahmen und weitläufige Öffentlichkeitsarbeit angesprochen werden kann.

Ein bedeutendes Einsparungspotential wird der Dämmung von öffentlichen und privaten Gebäuden zugeschrieben. 80% der Befragten sind hier der Ansicht, dass Wärmedämmung sinnvoll und rentabel ist.

Öffentlichkeitsarbeit

In Kooperation mit der lokalen Presse und in naher Zukunft via der Webseite

> *Fortsetzung auf Seite 15*

Die Errichtung eines Trinkwasser-Kraftwerkes im Versorgungsnetz des Wasserwerkes (Bild Links) und energieeffiziente Maßnahmen beim Um- und Ausbau der Mödlinger Kindergärten (Symbolfoto rechts) sind mögliche Maßnahmen, die im Rahmen des Holistic-Projektes realisiert werden sollen.

Impressum: Medienwerk „Mödlinger Stadtnachrichten", Medieninhaber, Herausgeber & Verleger: Stadtgemeinde Mödling, 2340 Mödling, Pfarrgasse 9. Layout: Helga [illegible]. Für den Inhalt verantwortlich: [illegible] Andreas Holzmann, Vizebgm. [illegible] Ferdinand [illegible], STR [illegible], STR [illegible], STR [illegible]. Druck: DRUCKTECHNIK [illegible] - [illegible] - Verlagspostamt Mödling

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NEUCHÂTEL
Quand les Ukrainiens s'exilent au Portugal

Le théâtre du Pommier accueille Denis Dattion à 18h pour le Café de l'Europe. Ce spécialiste évoquera la migration des Ukrainiens vers le Portugal. La conférence sera suivie d'un concert à 20h, puis d'une agape ukrainienne. Réservations: 032 725 05 05 ou www.ccn-pommier.ch /comm

Les paroissiens bevaisans invités à partager un souper

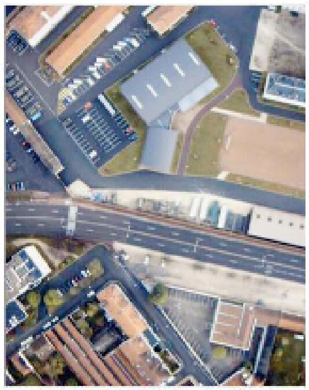
Le lieu de vie de Bevaix de la paroisse du Joran organise son traditionnel souper à la grande salle le samedi 16 février 2008, dès 18h15. Au menu: langue ou émincé de boeuf. Inscriptions: 032 846 15 35 ou 846 18 77.

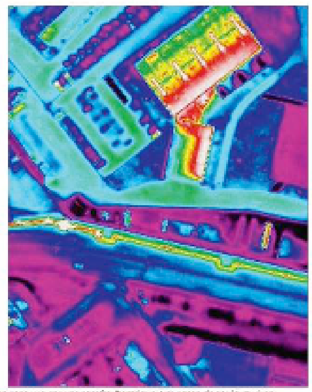
ÉCONOMIES D'ÉNERGIE

Un hélicoptère hi-tech pourchasse les bâtiments mal isolés à Neuchâtel

Dans le cadre d'un projet unique en Suisse, un hélicoptère muni d'une caméra thermique a survolé la ville de Neuchâtel hier et ce matin. But de l'opération: localiser les bâtiments les moins bien isolés, et sensibiliser le public aux déperditions d'énergie que provoque une mauvaise isolation.

[illegible]





THERMOGRAPHIE [illegible]

«Nous aurons enfin un outil de communication clair et compréhensible pour des non spécialistes»

[illegible]

Une opération exigeante

[illegible]

12 Régions

Le Temps
Jeudi 29 novembre 2007

L'Europe finance un projet écologique à Neuchâtel

Neuchâtel Le chef-lieu dispose de plus de 7 millions de subventions pour réduire de 23% l'utilisation d'énergies non renouvelables d'ici à 2011

Pierre-Emmanuel Buss

Pierre Bonhôte a retrouvé le sourire. Moins de trois semaines après sa défaite au second tour de l'élection au Conseil des Etats, le socialiste traverse une période faste sur le plan professionnel. Sur son initiative, la Ville de Neuchâtel a obtenu l'an dernier le 4e rang (sur 41) du projet européen d'optimisation énergétique Holistic. Cette réussite, fêtée officiellement hier en terre neuchâteloise avec les villes partenaires de Dundalk (Irlande) et Mödling (Autriche), permet au chef-lieu de disposer de plus de 7 millions de francs de subventions européennes. Objectif annoncé: réduire de 23% l'utilisation d'énergie non renouvelable dans trois quartiers d'ici à 2011.

Le projet avait été initié peu après une première déconvenue politique. Non réélu à l'exécutif de Neuchâtel en 2004, Pierre Bonhôte avait été engagé par le bureau d'ingénieurs Planair SA, à La Sagne. En 2005, il contactait ses anciens collègues du conseil communal pour leur présenter le projet Holistic, intégré au 6e programme-cadre de recherche et de développement de l'Union européenne (UE). «J'avais connaissance de cette démarche visant à favoriser une meilleure maîtrise de l'énergie à l'échelle d'un quartier. Je me suis tout de suite dit que la ville de Neuchâtel ferait une très bonne candidate...»

Deux éoliennes

Deuxième au classement des Cités de l'énergie derrière Lausanne, très attaché à la notion de développement durable, le chef-lieu a immédiatement accepté de se lancer dans l'aventure. Une fois trouvés deux partenaires européens, une condition fixée par l'UE, le Conseil communal a mandaté Planair pour développer le projet. Son mandat: trouver des solutions d'assainissement énergétique et de valorisation des sources d'énergie renouvelable dans le périmètre des quartiers du Mail, de la Maladière et de la gare CFF (5000 habitants).

Le résultat est spectaculaire. Imaginé en collaboration avec la Ville et l'Etat de Neuchâtel, l'EPFL, le Centre suisse d'électronique et de microtechnique (CSEM), Bauart architectes et l'association Ecoparc, le projet prévoit d'accroître substantiellement la production indigène d'énergie renouvelable. «Aujourd'hui, la Ville distribue chaque année 220 millions de kilowattheure (kWh), dont 18% d'énergie douce produite par des usines hydroélectriques installées dans les gorges de l'Areuse, détaille le délégué communal à l'Energie, Christian Trachsel. Grâce au projet Holistic, nous devrions atteindre un taux de 25%.»

Pour atteindre l'objectif, un premier effort sera fait sur la production de proximité. Deux éoliennes seront installées à Chaumont, montagne qui domine le chef-lieu. Elles produiront en moyenne 7,5 millions de kWh par année. «Malgré leur relatif éloignement, nous avons pu les englober dans le projet, note Pierre Bonhôte. Il n'était en effet pas possible d'imaginer pareille installation en ville.»

L'énergie hydraulique sera développée avec notamment la rénovation de l'usine de la Serrières et la construction de nouvelles turbines sur le Seyon pour une production annuelle totale de plus de 1,7 million de kWh. L'énergie solaire ne sera pas en reste: le toit du stade de la Maladière accueillera une centrale photovoltaïque flambant neuve. Production estimée: 0,4 million de kWh.

Le toit du stade de la Maladière accueillera une centrale photovoltaïque flambant neuve. Production annuelle estimée: 0,4 million de kWh. NEUCHÂTEL, 17 OCTOBRE 2007

De la parole aux actes

En parallèle, des efforts importants seront déployés pour réaliser des économies d'énergie. L'exemple le plus spectaculaire concerne les piscines du Nid-du-Crô. Grâce à plusieurs assainissements, la consommation d'énergie du complexe sera divisée par trois. Les privés ne seront pas oubliés. Les propriétaires auront la possibilité de s'engager dans une démarche d'optimisation de leurs installations de chauffage à un tarif préférentiel.

L'UE souhaite que la démarche fasse école. Car si les citoyens européens ont compris l'intérêt qu'il y a à réduire la part des énergies fossiles, ils peinent encore à passer de la parole aux actes. «Avec une forte concentration de moyens sur un petit périmètre, on obtient des résultats tangibles, souligne Pierre Bonhôte. Cela prouve qu'il est possible d'agir. C'est réjouissant pour l'avenir.»

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NEUCHÂTEL

Encore plus de Maho? C'est possible!

Le Kiwanis Jeunes-Rives remettra un don à Prodowne

NEUCHÂTEL

Le quartier du Mail, premier cobaye d'un projet énergétique européen

«Si nous parvenons à démontrer que ce test fonctionne à l'échelle du quartier Mail-Maladière-Crêt-Taconnet, l'expérience pourra être reproduite sur d'autres villes de Suisse et d'ailleurs»

Citoyens scrutés

Quelles actions pour agir de manière conséquente?

Le Conseil d'administration de la société anonyme en formation nomme l'équipe de direction

Josette Frésard à la tête de SIRUN S.A.

La conseillère communale de La Chaux-de-Fonds Josette Frésard a été nommée directrice de SIRUN S.A.

La Ville de Neuchâtel participe à un projet européen d'économie d'énergie

Réduire la consommation d'énergies non renouvelables

ACHIEVED DELIVERABLES FOR FIRST REPORTING PERIOD (MONTH 0 TO MONTH 18):

WORK NUMBER	DELIVERABLE NUMBER	LIST DELIVERABLE
1.1	1	Questionnaire to gauge public attitudes designed
1.1	2	Initial survey of public opinion in the zones
1.5	6	Aerial thermographs taken
1.7	8a	Excel spreadsheet integrating a model of the wind turbine and economic parameters
1.7	9	Installation of metering equipment
2D4	14	100 houses insulated resulting in a 40% improvement in energy efficiency
2D4	15a	33 condensing gas boilers installed
2D5	16a and 16b	Buildings refurbished to deliver reduction (30%) in consumption of energy providing heating service as a result of lower external fabric U-Values and reduced infiltration of outside air. (O'Fiach and LCH)
2D5	17	Energy management systems in hotel and student accommodation
2D6	18	100 ECO houses constructed
2D8	20	100 Smart meters installed
2M1	24	Construction site for hybrid renewable storage demo plant defined, design completed and construction schedule agreed
2M2	26	Design of solar roof programme Modling approved by Community and regional authorities
2M4	28	Analysis report and potential plan for energy consumption reductions of 11,800 kWh/annum of older buildings in Mödling at project end
2M5	29	Analysis, simulation and evaluation results for eco commercial building.
2M6	30	Analysis, simulation and evaluation results
2N1	33	A new 750 m2 photovoltaic plant
4.2	45	Project Board and CSG established
4.1	46	Project intranet operational
5.4	50	Promotional material for Switzerland
5.5	51	Selection of CONCERTO communities in Italy