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Project Coordinator: Seamus Hoyne
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Deliverable Report
Deliverable No 3.6
RES Retrofitting Actions - Final Report

CONCERTO INITIATIVE
SERVE

Sustainable Energy for the Rural Village Environment

Date: 31st October 2011

Author: North Tipperary County Council

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CONCERTO is co-funded by the European Commission

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1 Introduction

This report presents the final conclusions from the renewable retrofitting actions. It presents the work completed in the final period of the work package and presents the overall results in terms of works implemented. The analysis of energy and CO2 savings from the actions are being assessed as part of the monitoring aspects of the SERVE Project.

This report can be read in conjunction with the following previous reports

- SERVE D3.1:Progress Report on RES Retrofitting Actions
- SERVE D3.2 Report on Phase 1 of RES Retrofitting Actions
- SERVE D3.3 Report on planned installations to be installed in Phase 2 of RE Retrofitting
- SERVE D3.4 Report on Wood Stoves Specifications
- SERVE D3.5 Report on RES Retrofitting Actions Year 3

These reports are included in the appendices or are available at www.servecommunity.ie

The retrofitting actions are divided into residential and non-residential buildings and the results from each category are presented.

2 RES Retrofitting

The SERVE project ran a RES retrofitting scheme from the start of the project in 2008. The scheme continued on from Year 3 with applications processed, works inspected and grants paid on a weekly basis. The SERVE Grant Scheme stopped taking applications in Month 42 (April 2011) and works continued to be carried out until Month 47 and payments were made up until Month 48.

The scheme was promoted in conjunction with Work Package 1 throughout the year with additional promotion to announce the closing of the scheme. The scheme was promoted through local press, radio, newsletters, community information meetings, poster and leaflets.

The scheme also ran in conjunction with Sustainable Energy Authority Ireland's Greener Homes Scheme until Month 42. In Month 42 SEAI changed their scheme to the Better Energy Homes Scheme which combined their Energy Efficiency and Renewable Schemes. It also reduced its grant levels for the energy efficiency and renewable grant aided measures. As per Work Package 1 this had no impact on the operation of the SERVE Grant Scheme.

The final number of applications was 591 with 430 proceeding to complete works.

Work Package 3	*Period 2*	*Period 3*	*Period 4*	*Total*	*Target (kW/m^2)*	*% of Target achieved*
Wood Stoves (kW)	25.2	689.70	1571.29	2286	2300	99.4%
Wood Boiler (kW)		62	400	462	961	48.07%
Solar (m^2)	20.56	116.54	321.46	458.56	500	91.71%
Wind/PV (kW)			6	6	6	100%

Table 2-1: WP3 Works Completed

There were two school applications that withdrew their application at the very end of the project. They had committed to installing wood boilers and solar panels amounting 500kW and ~16m^2. The WP partners, and in particular the TEA, had worked with the applicants to complete procurement procedures and suitable technology providers had been selected. However, the building owners were unable to complete the project and co-funding was withdrawn or not made available at a very late stage.

Due to the late timing of the withdrawals the project team were unable to reallocate the committed funding. A small number of homeowners and non residential applications also withdrew at the end of the project. The final breakdown of houses with works completed is:

Figure 2-1: Sample installations (solar panels, wood stove insert)

2.1 Inspections and Technical Issues

There have been a total of 301 applicants to Work Package 3 in Period 4. A large majority of these have been for individual wood stoves and the majority of these were completed by a single contractor.

In all the total number of Work Package 3 residential inspections was 26. That is an inspection rate of 9% of all applicants. The only issue encountered with Work Package 3 inspections related to the installation of wood stoves where in a few cases the hearth did not meet the relevant Building Regulation requirement. This issue was identified at the very beginning of Work Package 3 and was rectified by the contractor immediately.

This issue has not reoccurred since the first two inspections. All subsequent contractors were notified and there was 100% compliance.

Tipperary Energy Agency completed an inspection on all non residential applicants' works. There were no major issues encountered that required call back.

3 Microgeneration

It was extremely difficult to progress this aspect of the project due to the current policy and supports available for micro-generation in Ireland. While there is a feed-in tariff available it is relatively small and therefore projects are difficult to make viable financially. A scheme was launched and promoted in January 2011 for small scale microgeneration.

WP3 partners NTCC and TEA had taken over responsibility for completing works on micro-generation from Surface Power Technologies (SPT). SPT had not delivered any results and it was agreed by the SERVE Consortium that in order to progress this work other partners should try to implement the work. SERVE project coordinators have been engaged with SPT with a view to their removal from the SERVE Contract entirely.

Figure 3-1: Promotion of SERVE Micro Generation Scheme

The procedure for applying to the SERVE Micro Generation scheme was as follows:

- The Applicant submitted the Application Form together with the 3 quotes (where applicable) and a copy of a Feasibility Study to North Tipperary County Council. Compliance with Planning Regulations, as applicable, was required.
- Tipperary Energy Agency assessed the Feasibility Study with regards to:
  - The proposed system
  - The appropriateness of the size of the system
  - Expected wind speeds in the case of wind turbines
  - Site orientation in the case of photovoltaic systems
  - The installer of the system
  - Location of the system
  - Cost/Benefit Analysis of the system and its output.
- If approved, a Letter of Offer was sent to the applicant from North Tipperary County Council
- The applicant signed this Acceptance of Offer Form and returned it to North Tipperary County Council. If the applicant was a Non Residential Applicant, the following documents were also submitted:
  - Evidence of Tax Compliance
  - Evidence of property, public & employers (where appropriate) liability insurance
  - Evidence of Title or Lease or Interest in Building/Land (whichever is applicable)
  - Evidence of VAT exemption/registration, as applicable.
- North Tipperary County Council then countersigned the Acceptance of Offer Form, returned a copy to the applicant, and works commenced
- Once the works were completed, the following documents were submitted to North Tipperary County Council
  - Original Invoice(s).
  - Original Receipt(s).
  - Declaration of Works Form.
  - ECTI Certificate of Completion that had been sent to the ESB for connection to the grid, completed by a registered electrical contractor for the system.
  - Tax Compliance documents of the contractor(s) e.g. Tax Clearance Certificate/C2.
- All payment approvals were subject to an inspection by Tipperary Energy Agency.

- Once the inspection was completed, documents reviewed, and approval was given, grant payment was made.

Expressions of Interest were low but there was one applicant to the Microgeneration Scheme. The applicant was a farmer who previously carried our energy efficiency upgrades under the SERVE Pilot Scheme. This applicant installed a 6kW Wind Turbine.

Figure 3-2: Micro Generation 6kW Wind turbine (Proven)

4 Conclusion

In principle the RES retrofitting action has been a success. The anticipated targets were all but achieve with an overall completion rate of approximately 99%. The partners involved had to work extremely hard during Year 2 and 3 of the project to generate significant momentum within the SERVE region. The project team overcame a number of barriers including

- Developing a suitable model to work with the National Retrofitting Scheme
- Organising a range of promotional activities to spread the word about the SERVE Project and the supports available
- Dealing with building owners who had to withdraw from the scheme despite having committed to completing works.
- Working with the constraints of the financial crisis in Ireland
- Revising the programme to meet the relevant demands within the region e.g. biomass stoves being a significant success.
- Dealing with the two large public building biomass heating projects which withdrew from the project, after the TEA team had taken them through procurement .

Appendix 1: SERVE D3.1:Progress Report on RES Retrofitting Actions

Project Acronym: SERVE
REF EC: (Project Number) TREN07/FP6EN/S.07.71106/038382
REF (project coordinator org.):
DOCUMENT:
REF.:

Project Coordinator: Seamus Hoyne
Project coordination org.: Tipperary Rural and Business Development Institute
Date: 8th December 2008
Revision: Final

Deliverable Report
Deliverable No.: 3.1
Work Package No: 3

CONCERTO INITIATIVE
SERVE
Sustainable Energy for the Rural Village Environment

Integrated Project

PRIORITY 6: Sustainable development, global change and ecosystems. Sub-priority: Sustainable energy systems.

RES Retrofitting Progress Report

Date: 8th December 2008

Author: Attracta Lyons, Sheila Healy (North Tipperary County Council), Paul Kenny (Tipperary Energy Agency Ltd)

Version: Final

CONCERTO is co-funded by the European Commission

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1 Introduction

The SERVE WP3 focuses on the increased use of renewable energy sources (RES) within the SERVE region. The focus of the work package on is wood biomass systems, which will replace the use of solid fuels in inefficient open fires. This will be augmented by supporting the use of solar water heating systems. In addition, the WP will result in 10 micro wind/pv systems being installed in appropriate locations.

2 Work Package Objectives

- To install 390 new individual renewable energy systems (260 wood biomass stoves, 30 wood biomass boilers, 400m^2 of solar water heating (flat plate and evacuated tube) and 10 residential wind/PV systems). 40% of systems will be installed by Month 18 and 100% completed by Month 36.
- All heating systems installed will demonstrate the most efficient technology (oil fired condensing boilers (80% efficient), wood stoves/boilers (60-90% efficient).
- To demonstrate new hybrid Wind/PV technology (450W turbine with 300W PV) for the domestic/commercial market developed by an Irish SME (www.surfacepower.com) at 10 prime locations
- To develop and implement a Green Electricity Purchasing scheme by Month 18 to result in replacement of 2000MWh of electricity with green supplier by Month 36.
- To increase the use of heat from renewable sources from 660MWh/yr in targeted buildings (equivalent to 6% of Heat Energy Demand) by 300% to 3,000MWh/yr and combined with energy demand reductions to increase % of supply of renewable energy from 6% to 20% by Month 36.

3 Workpackage Implementation

WP1 (EcoBuilding Retrofitting) of the SERVE project required considerable resources from NTCC and TEA due to the work in collaborating with SEI under the Home Energy Saving Scheme. In April 2008 it was determined that it would be more appropriate to delay the roll out of WP 3 until January 2009, after the implementation of Phase 1 of the retro-fitting measures. The fundamental reasons for this decision were

- Buildings were required to have achieved a specific level of energy efficiency before being given support for renewable energy installations. The delays in the roll out of WP 1 meant that building owners would not have achieved this level of energy performance in time
- Seeking to provide a clear focus on energy efficiency to the building owners as the first key step to implementation
- The significant focus on wood stoves as part of WP 3 will allow for quick implementation of upgrades in terms of renewables as there are no planning or significant technical issues with regard to installation.

3.1 Register of Suppliers

Suppliers and installers of energy efficient and renewable energy technologies who wish to be registered for the SERVE Project Grant Scheme are required to submit an application form together with tax compliance details, insurance, safety statement and evidence of product quality and experience. The register will be continuously updated. This register is available on the SERVE Project website www.servecommunity.ie, and from North Tipperary County Council. All applicants receive a copy of same. A number of RES suppliers and installers have registered to date and will be included on the register for Phase 2 of the SERVE Project Grant Scheme. The register will be continuously updated.

The Register was advertised for in January 2008 and a range of technology suppliers are now confirmed to have met the NTCC requirements. Meetings within a range of suppliers have been held to ensure that they are aware of the standards required in the SERVE region.

Details of the register are provided in Appendix 1.

3.2 Scheme Administration

The promotional material used for the SERVE WP1 has also referenced the potential for supports for implementation of renewable energy measures, once relevant energy efficiency measures have been implemented. The required documentation and information in relation to the measures which will be supported has also been drafted.

In October 2008 (Month 12) the WP team began discussions with Sustainable Energy Ireland on how it can work with the National Greener Homes Scheme, a grant scheme for domestic renewable energy systems, to facilitate uptake of renewable energy, in particular boilers. The links between the SERVE measures and Greener Homes Scheme are outlined below:

RE Technology	Supported by SERVE	Supported by Greener Homes Scheme
Wood Stoves	Yes	No
Solar Panels	Yes	Yes
Biomass Boilers (~30kW)	Yes	Yes

The SERVE WP3 team aim to work with SEI to maximise the grant support levels that building owners can access to increase the implementation of measures.

3.3 Potential Applicants

All 170 building owners who have participated in Phase 1 of the WP1 have been informed of the grant supports which will be available in the future for renewables. It is expected that approximately 50% of these will proceed with a renewable energy installation once they have achieved the energy efficiency targets.

4 Supported Measures

4.1 RES Technologies

4.1.1 Wood Biomass Stoves

The SERVE region currently has 6% of its heat energy provided from renewables. This is mainly from the use of wood as a fuel. The primary method of burning this fuel is the open fire which has a very poor efficiency. The open fire is very traditional in Ireland and part of its culture. It is a significant challenge make people adjust from its use.

While wood pellet and wood chip systems are important and easier step to improving the efficiency of the use of wood fuel is to focus on wood stoves. There are a number of reasons for focusing on wood stoves in the SERVE region

- Existing culture of using wood in the region
- Ease of installation of wood stoves in existing chimneys with limited technical difficulties
- Opportunities for using both stoves which are room heaters only and those who can provide space heating via radiators.
- The relative cost effectiveness of the systems compared to boiler systems

The SERVE project aims to install a total of 260 wood stoves within the region by Month 36.

4.1.2 Wood Biomass Boilers

The introduction of biomass boilers has gained increased prominence in the past three years since the introduction of the National Greener Homes Scheme. Recent analysis by the Mid West Regional Authority has indicated that a total of 600 systems have been installed in the Mid West Region and South Tipperary. It is not possible to get data for North Tipperary alone but an estimation has been made using population data. This would indicate that approximately 120 biomass boilers have been installed in North Tipperary. This could equate to 25 systems in the SERVE region.

The main systems which have been used for the residential sector in Ireland are based on wood pellets. Recently the use of wood gasification systems has emerged. Wood chip systems are primarily focused on the commercial sector.

The SERVE Contract aims to install a total of 30 such systems by Month 36.

4.1.3 Solar Water Heating Systems

Solar water heating technology is a well proven technology. There are a wide range of installers and product suppliers in Ireland at present and the Greener Homes Scheme had led to increased interest in their use. Recently, planning regulations have been revised to allow for 12m^2 of solar water heating systems to be installed without planning permission being required.

The SERVE project aims to install 400m^2 of solar water heating systems by Month 36. This is equivalent to approximately 100 systems for the residential sector.

4.1.4 Wind/PV Systems

The scope for the use of micro electricity generation systems has evolved considerably since 2005 when the SERVE project was first conceived. In 2005 it was not possible to connect a RES micro generation system to the grid without being treated as a large generator and there was no clarity over planning requirements.

Since 2005, due to active lobbying by relevant representative groups and engagement by Government Agencies and Departments the opportunities for the use of micro generation systems has evolved considerably. The advances include:

- Planning exemptions for micro wind and PV introduced in March 2008
- Grid Connection Procedures now in place which are specific for micro generation
- 'Smart meter' technology on a National scale being rolled out

The SERVE project has set a conservative target to install 10 micro wind/PV hybrid systems within the SERVE region. The systems are aimed at the residential/commercial sector and originally sized to be

a 450W turbine with a 300W PV panel with associated controls and storage. These systems will be supplied and installed by Surface Power Technology.

Opportunities exist for both grid connected and off-grid applications. Both these options will be explored and it is hoped that a number of each type of application will be applied. Appendix 3 provides details on the systems provided by Surface Power in this regard.

Figure 4-1: PV installation and Wind system for residential dwelling.

4.2 Standards for technology

The WP3 team have developed specific guidelines for installation which reference National guidelines and specifications. Appendix 2 provides details on the guidelines which area made available to all those on the register of suppliers/installers.

The technical guidelines for the micro wind/pv systems are yet to be developed due to emerging standards being developed at a National level. These will be developed once the nationals standards are finalised.

4.3 Expected Installations

The targets set in the SERVE Project with regard to installations of RES in existing buildings are as follows:

- High Efficiency Wood Stoves: 2600kW installed
- High Efficiency wood boilers: 900kW installed
- Solar Thermal panels: 400 m^2 installed
- Wind/ PV: 10 systems installed

High Efficiency Wood Stoves
It is estimated that these stoves will be installed in the range from 3kW to 14 kW. This would mean a total number of stoves in the range of 185 – 866 stoves. It is likely that the average size of these stoves installed will be in the range of 7kW – 10 kW. This would result in the range of 260 – 370 units installed.

High Efficiency wood boilers
It is estimated that these boilers will be installed in the range from 20kW to 100 kW. This would mean a total number of boilers in the range of 9 – 45 boilers. It is likely that the average size of these stoves installed will be in the range of 30kW – 50 kW. This would result in the range of 18 – 30 units installed.

Solar Thermal Panels
It is estimated that these panels will be installed in the range from $4m^2$ to $20m^2$. This would mean a total number of installations in the range of 20 – 100. It is likely that the average size of installations will be in the range of $4m^2$ to $8m^2$ for residential and 20- $100m^2$ for non residential. It is expected that the average as a result to be in the range of $6m^2$ -10 m^2 therefore a total number of installations in the range of 40 – 70 installations

Wind PV systems
It is expected that 10 systems to be installed.

Summary of installations

Capacity of Units installed					
	Possible		**Expected**		**Units**
	Min	**Max**	**Min**	**Max**	
Stove	3	14	7	10	kW
Boiler	20	100	30	50	kW
Solar Panel	4	20	6	10	m2
Wind PV	10	10	10	10	Units

Number of installations				
	Possible		**Expected**	
	Max	**Min**	**Max**	**Min**
Stove	867	186	371	260
Boiler	45	9	30	18
Solar Panel	100	20	67	40
Wind PV	10	10	10	10
	1022	225	478	328

The average number of installations between Maximum and Minimum is 403 installations. It is difficult to judge the exact number of installations for month 12-36 as the non residential sector is varied in application and installation size. For example in the case of solar panels, one large installation, for example a pool, could feasibly install $100m^2$ and utilise all the heat effectively. It is expected that there is an even mix of installations between residential and non residential installations in the range of 328 – 478 installations.

Initial estimations have been completed on the potential RES production and CO_2 savings from the expected installations, as shown in the following figure. The expected 2,400 MWh of RES production from the installations will result in approximately 900 Tonnes of CO_2 being saved in the region.

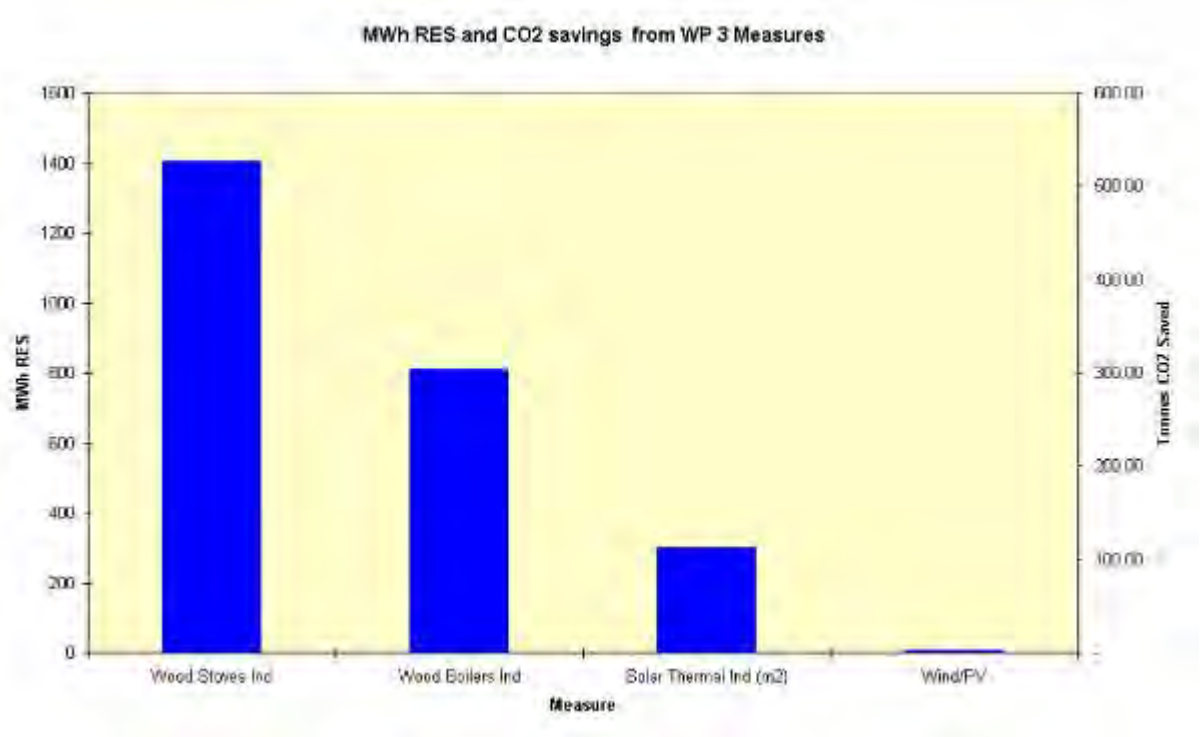


Figure 4-2: Expected MWH and CO_2 savings from RES installations

4.4 Revised Targets

The focus in Months 12 to 24 will be wood stoves, solar water heating systems and wind/pv systems. All those who have completed work in WP1 Eco Building Retrofitting will be considered for support as part of WP3. It is expected that 50% of wood stoves and solar water heating systems will be installed by Month 24. All 10 wind/pv systems will be installed by Month 24.

Biomass boilers and solar water heating systems present opportunities for both the residential and commercial sector. Careful consideration will be given to the installation of such systems within the commercial sector as it could consume the all of the funding and capacity within the SERVE region. These will be evaluation on a case by case basis. Working with the National RE Heat Funding programme will provide an opportunity for the SERVE project to create a multiple effect. All biomass boilers will be installed by Month 36, along with the remainder wood stoves and solar water heating systems.

5 Green Electricity Purchasing

The WP 3 is preparing to work with Senergy EConnect once it provides a report on the potential for the implementation of a Green Electricity Purchasing Scheme in the SERVE region. This report is due in Month 18 and once received the WP3 team will determine how to implement this scheme.

6 Conclusion

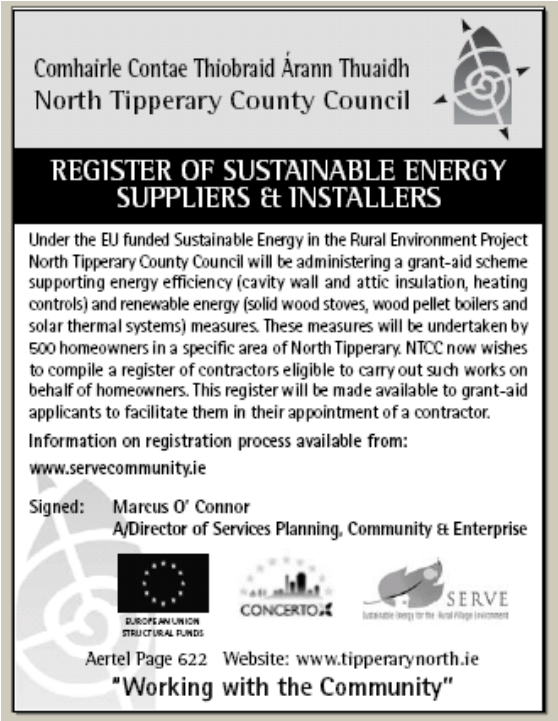
The development of renewables in the SERVE region will require provision of high quality information which informs consumer choice. The WP3 team will be putting such information sources in place in conjunction with existing resources.

The key challenges will be ensuring that the products installed meet relevant quality standards. This will require the WP 3 team to also work with the relevant training providers to ensure that the installers are approved and providing a quality service to building owners.

Appendices

Appendix 1: Register of Suppliers and Installers

The register of suppliers/installers is available on www.servecoummunity.ie, or by post on request. The register is sent out to all applicants at and they are advised that the file is being updated on a continuous basis. The initial call for suppliers/installers was made through the press in Month 4/5.



Comhairle Contae Thiobraid Árann Thuaidh
North Tipperary County Council

REGISTER OF SUSTAINABLE ENERGY SUPPLIERS & INSTALLERS

Under the EU funded Sustainable Energy in the Rural Environment Project North Tipperary County Council will be administering a grant-aid scheme supporting energy efficiency (cavity wall and attic insulation, heating controls) and renewable energy (solid wood stoves, wood pellet boilers and solar thermal systems) measures. These measures will be undertaken by 500 homeowners in a specific area of North Tipperary. NTCC now wishes to compile a register of contractors eligible to carry out such works on behalf of homeowners. This register will be made available to grant-aid applicants to facilitate them in their appointment of a contractor.

Information on registration process available from:
www.servecommunity.ie

Signed: Marcus O' Connor
A/Director of Services Planning, Community & Enterprise

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Aertel Page 622 Website: www.tipperarynorth.ie
"Working with the Community"

All the information required to interested suppliers is provided via the SERVE website, or it is available from NTCC. Each supplier needs to supply complete an application form with supporting documentation. Suppliers can also contact NTCC and TEA with any queries.

Documentation required for Application

- Signed, completed Application Form
- Tax Documents - A Tax Clearance Certificate or C2 number and expiry date. This will need to be monitored throughout the lifetime of the project to ensure up to date details are on file
- Insurance cover – Evidence of satisfactory public liability and employer liability cover must be submitted
- Qualifications
- Case Study
- Quality and Safety Systems
- Product Quality Certification

Reviewing of Applications

The application form, the tax documents and the insurance documents are reviewed by North Tipperary County Council. The technical elements are reviewed by Tipperary Energy Agency.

Register Provided to Public

The register will provide the following information

- Name/Address of Supplier/Installer
- Types of Services/Products provided
- Website/e-mail address of supplier/installer

At present there are 18 companies for WP3 on the register of suppliers/installers. (Copy on next page)

Name	Products			Address					Contact No.	E-mail	Website
Acorn Energy	Solar Thermal Systems	Wood Heating Systems	Wood Stoves	The Village Office	Main Street	Cloughjordan	Co. Tipperary		086 3987116 / 087 6377460	infor@acornenergy.ie	www.acornenrgy.ie
Technologie Ltd	Solar Thermal Systems			Unit 14	Marina Commercial Park	Centre Park Road	Cork		021 4319984	brian@aquatech.ie	www.polarbear.ie/www.aquatech.ie
CareyGlass Solar	Solar Thermal Systems			Limerick Road	Nenagh	Co. Tipperary			1890 252 412	ecarey@careyglasssolar.com	www.careyglasssolar.com
Plumbing & Heating	Solar Thermal Systems			Cappincur	Tullamore	Co. Offaly			086 2647697		
D. Harris Heating & Plumbing	Solar Thermal Systems	Pellet Based Wood Heating Systems	Wood Stoves	Unit 11a	Santry Business Park	Santry	Dublin 9		01 8669100	pharris@harrisheating.ie	www.harrisheating.ie
EGPS Ltd	Solar Thermal Systems			Noard	Two Mile Borris	Thurles	Co. Tipperary		0504 44437	info@egps.ie	www.egps.ie
EHS	Solar Thermal Systems	Wood Heating Systems	Wood Stoves	Rathlogan	Johnstown	Co. Kilenny			056 8838000 / 086 1689014	info@ehsltd.ie	www.ehsltd.ie
FPI Solar	Solar Thermal Systems			Derrycallaghan	Moneygall	Co. Offaly			087 916500	fpi_solar@yahoo.com	
Glas Energy	Solar Thermal Systems	Wood Heating Systems	Wood Stoves	Mullins Mill	Kells	Co. Kilkenny			056 7728255	info@glas.ie	www.glas.ie
Heatright	Solar Thermal Systems	Wood Heating Systems	Wood Stoves	Unit 1	IDA Industrial Estate	Baltimore Road	Skibereen	Co. Cork	028 23680	ecowarm@heatright.com	www.heatright.com
Keltic Renewables	Solar Thermal Systems	Wood Heating Systems	Wood Stoves	Tolerton	Ballickmoyler	Co. Carlow			085 1324049 / 086 4082585	ojregan@hotmail.com or vincentbailey@eircom.net	
Michael McBride	Solar Thermal Systems			16 Primrose Gardens	Clarecastle	Co. Clare			086 1704746	m.mcbride2007@yahoo.com	
Multi Services	Solar Thermal Systems			Lourdes Road	Roscrea	Co. Ctipperary			0505 22125 / 086 3552868	mservices@eircom.net	
Sean O Brien	Solar Thermal Systems	Wood Heating Systems		Deerpark	Silvermines	Co. Tipperary			086 8278492	nobrie@hotmail.com	www.obsolar.ie
Solarvision	Solar Thermal Systems	Wood Heating Systems		Mountrath Enterprise Park	Mounthrath	Co.Laois			057 8756345 / 087 6849981	seamus@solarvision.ie	www.solarvision.ie
Solaris	Solar Thermal Systems		Wood Stoves	Macroom E Business Park	Bowl Road	Macroom	Co. Cork		026 21014	info@solaris-energy.ie	www.solaris-energy.ie
T&E Plumbing	Solar Thermal Systems			Longfordwood	Clonakenny	Roscrea	Co. Tipperary		0505 43926	teplumbing@eircom.net	
The Stokehole		Wood Heating Systems	Wood Stoves	Tooreen	Dunmanway	Co. Cork			023 55454 / 086 8072022	info@thestokehole.com	www.stokehole.com

Appendix 2: Quality Standards

Technical Specifications

Section 5

Wood Stoves

Wood Stove

5.0 Overall Requirements

The objectives of this section of the Specification are to ensure that the wood burning stoves meet best practise standard and are installed correctly. These stoves will increase the efficiency of combustion solid fuel and increase the proportion of renewable fuels used in the region.

The wood stove specifications embody the measures necessary to achieve the above objectives ensuring that the following parameters are met.

i) Undertake the measures without detrimental irreversible alterations to the dwelling.
ii) Ensure that the client is satisfied with the work.
iii) Ensure that the measures are effective for their working life.
iv) Ensure that the measures do not compromise the safety of the household or the contents and structure of the dwelling.
v) Ensure that all statutory obligations in relation to the work have been met.

5.1 Measure Description

5.1.1 Supply and install a wood burning stove to replace an existing open fire. Alternative installations will be considered on a case by case basis as per recommendation from the building energy audit.

5.1.2 The wood burning stoves must comply with the following

- Be capable of burning wood only. Stoves capable of burning coal/ lignite are not eligible.
- Comply with one of the following European standards:
  - European EN 13240
  - Norwegian NS 3038/59
  - Austrian Art 15a
- Have a minimum thermal efficiency of 65% as tested in above standards.
- CE Mark
- Sized appropriately for the installation with regard to the heating demand in the room and the heating demand from the boiler if applicable.

5.2 Installation

5.2.2 Wood stoves will be installed as per manufacturer's instructions.

5.2.3 All pipework installed to the stove will be to the required standard and insulated appropriately.

5.2.4 Flue installation will be as per manufacturer's instructions and insulated where appropriate.

5.2.5 Where boiler is used for heating water and/ or radiators, appropriate controls should be installed to ensure the most efficient use of the heat generated. E.g. a thermostatic operated motorised valve, a thermostatically controlled pump etc.

5.3 Commissioning

5.3.2 Detailed Instructions must be given to the building owner.

5.3.3 Detailed Instruction manuals must be available to the building owner in English.

Technical Specifications

Section 6

Wood Fuel Boilers and Wood Pellet Stoves

Wood Pellet Boilers and Wood Pellet Stoves

6.0 Overall Requirements

The objectives of this section of the Specification are to ensure that the wood pellet boilers and stoves meet best practise standard and are installed correctly. These will replace fossil fuelled boilers, decrease costs for the individual and increase the proportion of renewable fuels used in the region.

The wood boiler/stove specifications embody the measures necessary to achieve the above objectives ensuring that the following parameters are met.

i) Undertake the measures without detrimental irreversible alterations to the dwelling.
ii) Ensure that the client is satisfied with the work.
iii) Ensure that the measures are effective for their working life.
iv) Ensure that the measures do not compromise the safety of the household or the contents and structure of the dwelling.
v) Ensure that all statutory obligations in relation to the work have been met.

6.1 Measure Description

6.1.1 Supply and install a wood pellet stove or wood fuel boiler (pellet or log) to replace an existing fossil fueled boiler. Alternative installations will be considered on a case by case basis as per recommendation from the building energy audit.

6.1.2 The wood pellet boilers and stoves must be a registered product on the SEI greener homes scheme (Phase 2).

6.2 Installation

6.2.1 Installation must be done by a registered installer on the SEI greener homes scheme.

6.2.2 Installers of wood log boilers should have provided appropriate evidence of skills for installation of such systems.

6.2.3 Installation should meet at relevant industry standards for installation of such appliances

6.3 Commissioning

6.3.1 Detailed Instructions must be given to the building owner.

6.3.2 Detailed Instruction manuals must be available to the building owner in English.

Technical Specifications

Section 7

Solar Thermal Systems

Solar Thermal Systems

7.0 Overall Requirements

The objectives of this section of the Specification are to ensure that solar thermal tubes or flat panels meet best practise standard and are installed correctly. These will replace typically electric immersion heaters. The measure will decrease costs for the individual and increase the proportion of renewable fuels used in the region.

The wood stove specifications embody the measures necessary to achieve the above objectives ensuring that the following parameters are met.

i) Undertake the measures without detrimental irreversible alterations to the dwelling.
ii) Ensure that the client is satisfied with the work.
iii) Ensure that the measures are effective for their working life.
iv) Ensure that the measures do not compromise the safety of the household or the contents and structure of the dwelling.
v) Ensure that all statutory obligations in relation to the work have been met.

7.1 Measure Description

7.1.1 Supply and install solar thermal panels to heat water for domestic hot water (including ancillary requirements of storage tanks etc). Alternative installations will be considered on a case by case basis as per recommendation from the building energy audit

7.1.2 The solar panels must be on the SEI greener homes scheme (phase 2).

7.2 Installation

7.2.1 Installation must be done by a registered installer on the SEI greener homes scheme (phase 2).

7.3 Commissioning

7.3.1 Detailed Instructions must be given to the building owner.

7.3.2 Detailed Instruction manuals must be available to the building owner in English.

Appendix 3: Surface Power Off Grid and Grid Connected Systems

"Make your own FREE electricity - simply and easily !"

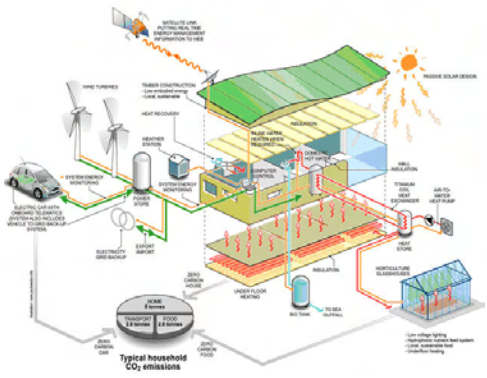
Domestic
electricity systems

Domestic Electricity Systems -

Basic grid connections to slow down or stop your meter

Surface Power

Renewable
electricity systems



House of tomorrow ! Have you heard about carbon free homes ?. These are our future homes that will have a net zero balance of carbon at the year end. There are many ways to do this but we firmly believe that current energy from nature plus new technology's such as fuel cells and hybrid vehicles are the very near future. We have been working to make our systems workable with all these new technologies from day one. Energy without bills and carbon emissions are the future. Your journey starts here !

An investment in a renewable energy system for your home is unlike any other investment in your property. A renewable energy system is a real active production system, which is real money saved every year and it does this without harming the environment.
The added value in your home because of its own energy system, with significant increases in current and future energy bills means that payback is now optimum.

We have vast resources in FREE renewable energy. Our earth provides us with wind, rain and sun for free every year. We now have opportunities to harness it to provide us with free, green energy with big savings on our annual energy bills.

Living with green electricity is no different to living with national grid. The electricity is the same, the systems are automatic and you turn the lights, TV and kettle on just as you normally do.

The only difference is that the electricity produced costs you nothing. Your green energy system simply harvests it from nature.

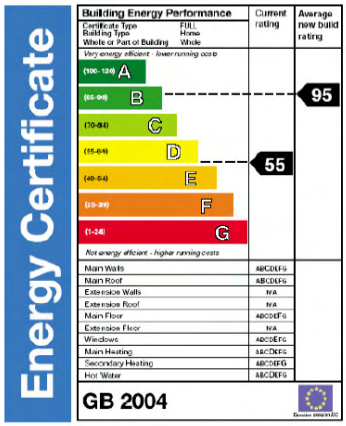
All our systems are enabled for SMART metering as standard as this is the future method of metering both consumption and export. SMART will change the way we use electricity because it applies a time based tariff instead of a kWh measurement. This means we will pay a higher price for electricity during the day and less for it in off peak periods. It's vital that your green energy electricity system is designed to take account of SMART metering.

One of the advantages of SMART and our PGT systems will be the ability to harvest cheap electricity at night, store it and use it during the day. (see our technical newsletter for updates on SMART)

Did you know that the solar energy that falls on Ireland is the same or higher as Germany receives which has the largest solar install base in the world as of 2007.

970 Trillion kWh's of energy falls from the skies every day, too bad we don't use it.

Solar energy falls as daylight which we can harvest 12 months of the year and it also creates our wind systems.



European Energy Performance of Buildings Directive; with the new building energy rating becoming law on all domestic homes from Jan 1st, 2008, your homes value will be affected by the amount of energy and carbon emissions which it is responsible for.
You won't be able to sell or rent a new or second hand property without getting this label. Adding your own green electricity system will enhance this label and increase the value of your property instantly. More people will compete to purchase your property because it will have lower bills, be cheaper to run and have many other advantages over a house with no renewables. **A better energy label means higher house prices.**

ESB Networks
Serving all electricity customers

CER
Commission for Energy Regulation

We have been participating in the many changes of processes and rules currently underway by the regulator and the DSO (ESBN). We have been doing grid connections for one year and achieved ESB G10 compliance in Summer 2006.

We are currently involved in the SMART metering process, new global wind turbine standards, the micro generation consultation and many other procedural, legal and regulatory changes.

We are always operating at the forefront of our technology area as it evolves.

Many options for monitoring your system are available; local metering, remote metering and full wireless monitoring systems.

In the very near future, our CEMS touch screen technology will be available as a SMART metering upgrade which is designed to manage your systems including hot water and rainwater harvesting as one management system, **see CEMS for details**.

The main advantage is that current **PGT** solutions and **CEMS** are fully compliant with all types of conventional local generation including Hydro, Fuel Cell of any type, Hybrid hydrocarbon & bio-fuel vehicles.

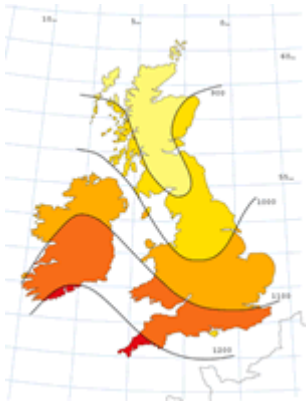
All basic grid direct connections must comply with **EN50438** which will be published late 2007 and enacted into law by 2008. Regardless, we have been designing our solutions to this standard since 2005.
This standard restricts the amount of the plate rating of renewable equipment which can be grid connected, **5.75 kw maximum** plate rating on single phase and up to **11 kw plate rating** on three phase. A licence and network notification is required also which we organise.

Please note, on our PGT grid connected systems, these are designed to be exempt from the standard and hence no limit on the amount of equipment applies, neither is there any requirement for regulator licence or DSO network approvals.

Full export control for SMART is configurable with PGT but excess energy is stored or exported by choice whereas basic grid connections where energy is not used, it is spilt onto the grid.

Installation of renewable systems are straight forward regardless of whether you are building a new house or retrofitting into an existing house.

The reason for the straight forward retrofit is due to the fact the house is already wired for electricity and the electricity is all the same. This has the advantage of having a reasonable and straight forward installation cost easily carried out by a competent certified electrician.



Solar energy comes to us in the form of daylight and is an annual constant with approx 1100 kWh's falling on every square meter per year, every year.

This is a very large natural resource for electricity and solar electric systems are maintenance free and come with a minimum production guarantee of 25 years and last longer than this in reality.

If you want to have a renewable system which will operate normally in a power cut or during network upgrades, then you need to avoid direct grid connections and select either our PGT or Off-grid systems.

You will also need to check your voltage levels if you want to use a basic grid connection for wind also. (see our technical newsletter for issues with basic grid connected wind)

Export payments: both our grid connected systems are designed for SMART and to receive REFIT (renewable energy feed-in tariffs) for exported energy when it arrives shortly, but PGT systems will have the added advantage of exporting when you choose for the highest value tariffs during the day, (see our technical newsletter for details)

Utility connected systems
basic grid connections

Description

A basic grid connected system involves one or several forms of electrical inputs into your property, which may be solar photovoltaic (electric) panels, wind turbines, hydro power, CHP (combined heat & power), etc.

A basic grid connection needs the grid to operate so your system will not work in a power cut, etc. If you are getting energy in from your solar system, it automatically goes into a utility connected inverter and then directly into the wiring of your property. The result is that you will use your own energy first and the incoming electricity grid second.

Basic grid connections are simple to setup and fully automatic in their operation

Hybrid Sources of Input

A hybrid system is when you have more than one type of input technology, i.e. you might have solar and wind. When developing a hybrid specification for which sources of input to use, you need to consider their output profile versus your usage profile, i.e. if you use energy every day in a similar fashion, then you need to start with solar photovoltaic panels, if you have a stream or river then you may upgrade or add that in. If you have a site suitable for wind you may include that. Sometimes you will only be able to use Solar photovoltaic energy due to your location but solar is the best form of energy as it occurs every day unlike other sources of renewables such as wind; and with our systems, you'll be able to integrate new fuel cell, hybrid vehicle technologies, our current solar hot water & heating systems and our rain harvesting systems. With our grid connected systems, you are future proofed no matter what happens.

Energy Profile

It's important that in the design of a system that you understand your energy profile. You are responsible for energy use to produce electricity, hot water, central heating and supply water in the building.

The size of the house is not important but the use. A 2000 sq ft holiday home would have a different requirement from a 2000 sq ft house in every day use.

But it is also important to know that you can convert to a green energy house in stages and grow your systems over time. Reduction in energy is also important and this can be done by increasing attic insulation to over 350 mm especially if you have radiators. Changing light bulbs, etc and buying the correct appliances such as A++ for fridge/freezers, etc

Sizing

Sizing a system is straight forward; just contact us with your electricity bill and we'll give you a few options which will all be upgradeable.

Solar photovoltaic can be used everywhere, wind can be used where you have a site with clearance between the South & West to catch prevailing winds, Hydro can be used where you have a strong enough stream. Wind cannot be installed in urban locations, towns and cities.

Installation

Installation of a basic grid connected system can be as simple as mounting your solar photovoltaic panels on your roof, wall or ground mountings, running 2 cables from the panels to a wall mounted utility inverter and then simply plugging it in and your online automatically.

Larger systems will need to be cabled into your electrical supply buzz bar, again a quick job but it will require a qualified electrician.

Standards

All basic grid connections are soon to be covered by **EN50438**, a European standard covering all member states. It will be published later this year and become law in 2008. All our systems are designed to comply with this standard and the network DSO and regulator already is adopting into their processes.

Technical standards apply to all utility connected systems including many EN standards and local network interface settings; we comply with all these since early 2006 when we started grid connections.

Please note that under EN50438, basic grid connections are restricted to 5.75 kw(p) on single phase and 11kw(p) on three phase. **For larger grid connected systems, please see our PGT systems.**

CER

Regulatory & network rules

All basic grid connections require licensing and a network approval. We handle this and provide the required approvals with your system.

Step one
install the solar panels

Step two
mount the utility inverter

Step three
run the cables

Step four
just plug it in

Step five
monitor your free power

Mounting systems; we supply wall, ground and flat roof mounting systems so every building can mount or solar energy products of all types in the best possible location.

Mounting angles; the optimum mounting direction is south with a 30 degree above horizontal for summer and 60 degrees for winter. Some installations will have to mount according to roof specifications already existing but in reality, solar photovoltaic panels will operate at any angle but there will be a slight reduction in efficiency depending on the angle.

Operation: the operation of a basic grid connected system is fully automatic once installed. You simply forget about it. It has the effect of slowing down your electricity meter and if you are producing the same amount of electricity as you are using, it will stop your meter.

SMART meter tariffs; with the new SMART meters arriving shortly, properties with renewable energy systems will have first options on these meters. These meters have a built in export channel which will allow you calculate your export value (remember exports will be time value based and not kW/h based). Export will come from two sources, firstly, carbon off-sets which you can sell on the market and secondly from a feed-in tariff which will be available in the near future.

In the meantime, basic grid connections will slow your meter down by the exact amount of electricity you are producing.

Wind Turbines using a basic grid connection: the financial feasibility of wind turbines used in a basic grid connection is currently poor due to a significant amount of spillage onto the grid during the night. This currently means poor payback on basic grid connected wind turbines. SMART metering will apply a higher daytime tariff and possible a zero night-time tariff which will only make this payback longer or unachievable. We currently don't do basic grid connected wind as it makes no financial sense.

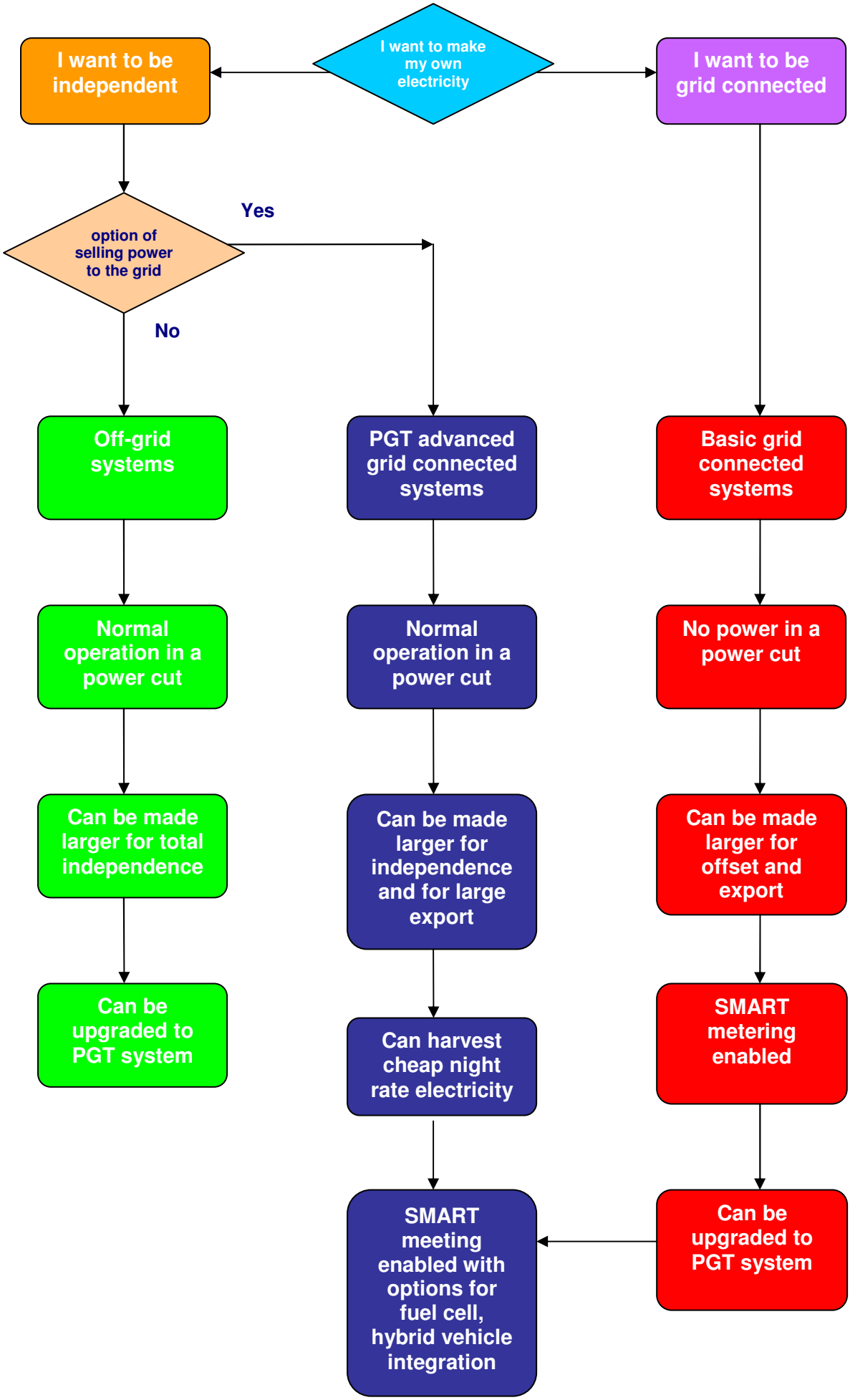
Wind Turbine Note: to use wind turbines as part of a renewable system, please see our PGT grid connected systems where excess grid connected power is stored and our off-grid systems where all power is stored.

System specifications

Type	kWh(p)	Type of connection	License & network approval required	EN50438 approved	SMART meter enabled	SMART meter harvesting	Works in power cut	Country approvals
Solar Photovoltaic GC 1	0.5 kW(p)	Basic grid connection	Yes, supplied	Yes	Yes	No	No	EU
Solar Photovoltaic GC 2	1.0 kW(p)	Basic grid connection	Yes, supplied	Yes	Yes	No	No	EU
Solar Photovoltaic GC 3	1.5 kW(p)	Basic grid connection	Yes, supplied	Yes	Yes	No	No	EU
Solar Photovoltaic GC 4	2.0 kW(p)	Basic grid connection	Yes, supplied	Yes	Yes	No	No	EU
Solar Photovoltaic CG 5	2.5 kW(p)	Basic grid connection	Yes, supplied	Yes	Yes	No	No	EU
Solar Photovoltaic GC 6	3.0 kW(p)	Basic grid connection	Yes, supplied	Yes	Yes	No	No	EU
Solar Photovoltaic GC 7	3.5 kW(p)	Basic grid connection	Yes, supplied	Yes	Yes	No	No	EU
Solar Photovoltaic GC 8	4.0 kW(p)	Basic grid connection	Yes, supplied	Yes	Yes	No	No	EU
Solar Photovoltaic GC 9	4.5 kW(p)	Basic grid connection	Yes, supplied	Yes	Yes	No	No	EU
Solar Photovoltaic GC 10	5.0 kW(p)	Basic grid connection	Yes, supplied	Yes	Yes	No	No	EU
Solar Photovoltaic GC 11	5.5 kW(p)	Basic grid connection	Yes, supplied	Yes	Yes	No	No	EU
Grid connected Wind turbine	Please note due to a technical issue with interface settings on the network, we are not supplying grid connected wind on the low voltage domestic network. Please see our technical newsletters for updates on this issue.							

Note 1: three phase grid connections need to be configured depending on requirements.
Note 2: any connections larger than allowed kW(p) above under EN50438 must go through the DSO network connection process. Alternative options are to use our PGT grid connected systems which are not constrained by the standard and can go to power station sizes. The DSO connection process for LARGE basic grid-connect systems can take much longer and will involve planning and other technical planning including a grid evaluation if over 50 kW(p).
Note 3: for larger systems, please see our commercial brochures.
Note 4: if you want to have power in a power cut, you will need to choose a PGT or an off-grid system.

How to choose a system
to suit you



Wind Turbine information
micro Jetstream turbine

Description

Surface Power's micro turbine is designed to connect to our off-grid solar systems and our PGT grid connected systems.

These turbines are designed for high wind conditions in Ireland & Scotland. Systems are straight forward to install and mount on a standard street light pole or other customised mounting with a blade diameter of 1.8 metres.

Systems come with a choice of two controllers, Jetstream one producing 460 watt/h (p) and Jetstream two producing 730 watt/h (p)

System comes with electromagnetic braking as standard with a straight forward installation in domestic situations.

Interface Setting issue in Republic of Ireland

Due to the restrictive interface settings of the national grid in Ireland, grid connected wind turbines will only work in certain locations.

Because the ideal locations for wind are areas with the greatest risk of voltage issues, we are currently not selling grid connected wind turbines.

Our PGT systems which the most advanced grid connection technology can use our wind systems.

Please note that basic grid connections are restricted to 5.75 kw (CER) and 6kw (ESBN).

Any basic grid connection which goes over these values needs to pay a fee of approx 9000 euros for application (ESBN).

Illegal connections that are not listed with the DSO or are of illegal size will be detected automatically by SMART metering.

Our PGT systems can be any size without fee.

Irish Sustainable Building SHOW 2006
Winner - New Product of the Show award 2006

iwea

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ENVIRONMENTAL & SUSTAINABLE CONSTRUCTION ASSOCIATION

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"Make your own FREE electricity - simply and easily !"

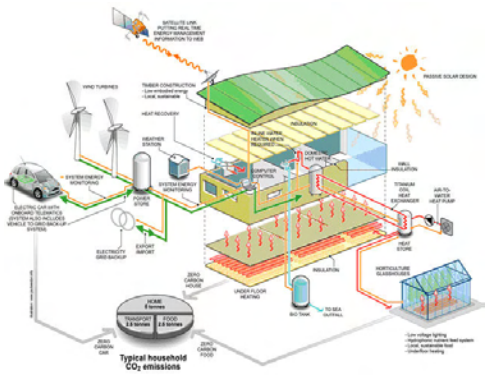
Domestic
electricity systems

Domestic Electricity Systems -

Off-grid for full or part independence from the grid

Surface Power

Renewable
electricity systems



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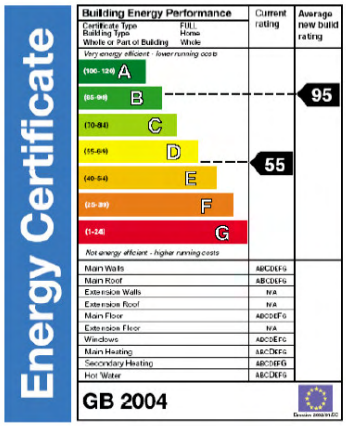

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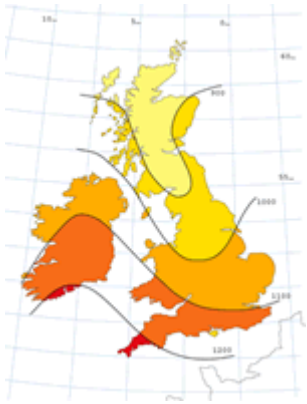
Please note, on our PGT grid connected systems, these are designed to be exempt from the standard and hence no limit on the amount of equipment applies, neither is there any requirement for regulator licence or DSO network approvals.

Full export control for SMART is configurable with PGT but excess energy is stored or exported by choice whereas basic grid connections where energy is not used, it is spilt onto the grid.

Installation of renewable systems are straight forward regardless of whether you are building a new house or retrofitting into an existing house.

The reason for the straight forward retrofit is due to the fact the house is already wired for electricity and the electricity is all the same. This has the advantage of having a reasonable and straight forward installation cost easily carried out by a competent certified electrician.



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This is a very large natural resource for electricity and solar electric systems are maintenance free and come with a minimum production guarantee of 25 years and last longer than this in reality.

If you want to have a renewable system which will operate normally in a power cut or during network upgrades, then you need to avoid direct grid connections and select either our PGT or Off-grid systems.

You will also need to check your voltage levels if you want to use a basic grid connection for wind also. (see our technical newsletter for issues with basic grid connected wind)

Export payments: both our grid connected systems are designed for SMART and to receive REFIT (renewable energy feed-in tariffs) for exported energy when it arrives shortly, but PGT systems will have the added advantage of exporting when you choose for the highest value tariffs during the day, (see our technical newsletter for details)

Independent systems
off-grid connections

Description

An off-grid system involves one or several forms of electrical inputs into your property, which may be solar photovoltaic (electric) panels, wind turbines, hydro power, CHP (combined heat & power), etc.

An off-grid system **does not need** the grid to operate but it will require a base support form either the grid or a stand alone generator if no grid is available. In simple terms, it helps you create an independent system which can be expanded over time.

It is fully automatic and stores electricity, it's inverters can be expended up to multiples of 3 kW(p).

Hybrid Sources of Input

A hybrid system is when you have more than one type of input technology, i.e. you might have solar and wind. When developing a hybrid specification for which sources of input to use, you need to consider their output profile versus your usage profile, i.e. if you use energy every day in a similar fashion, then you need to start with solar photovoltaic panels, if you have a stream or river then you may upgrade or add that in. If you have a site suitable for wind you may include that. Sometimes you will only be able to use Solar photovoltaic energy due to your location but solar is the best form of energy as it occurs every day unlike other sources of renewables such as wind; and with our systems, you'll be able to integrate new fuel cell, hybrid vehicle technologies, our current solar hot water & heating systems and our rain harvesting systems. With our off-grid systems, you store the full value of the energy harvested.

Energy Profile

It's important that in the design of a system that you understand your energy profile. You are responsible for energy use to produce electricity, hot water, central heating and supply water in the building.

The size of the house is not important but the use. A 2000 sq ft holiday home would have a different requirement from a 2000 sq ft house in every day use.

But it is also important to know that you can convert to a green energy house in stages and grow your systems over time. Reduction in energy is also important and this can be done by increasing attic insulation to over 350 mm especially if you have radiators. Changing light bulbs, etc and buying the correct appliances such as A++ for fridge/freezers, etc

Sizing

Sizing a system is straight forward; just contact us with your electricity bill and we'll give you a few options which will all be upgradeable.

Solar photovoltaic can be used everywhere, wind can be used where you have a site with clearance between the South & West to catch prevailing winds, Hydro can be used where you have a strong enough stream. Wind cannot be installed in urban locations, towns and cities.

Installation

Installation of an advanced grid connected system can be as simple as mounting your solar photovoltaic panels on your roof, wall or ground mountings, running 2 cables from the panels to your storage system, mounting and cabling your inverter and then simply plugging it in and you are using your own electricity automatically.

To integrate with your house electricity system will involve an electrician and uses the wiring already in your property.

Standards

All off-grid systems comply with CE standards, a European product standard covering all member states.

These systems do not connect to the grid and are fully independent.

Step one
install the solar panels

Step two
mount the off-grid inverter

Step three
install the storage system

Step four
run the cables

Step five
intergate into electrics

Step six
use your free power

Mounting systems; we supply wall, ground and flat roof mounting systems so every building can mount or solar energy products of all types in the best possible location.

Mounting angles; the optimum mounting direction is south with a 30 degree above horizontal for summer and 60 degrees for winter. Some installations will have to mount according to roof specifications already existing but in reality, solar photovoltaic panels will operate at any angle but there will be a slight reduction in efficiency depending on the angle.

Operation: the operation of an off-grid grid connected system is fully automatic once installed. You simply forget about it. You transfer certain parts of your house depending on the size of your starting system. All lights, TV, radios, computers, etc. It all depends on the size of your system.

Inverter ratings; off-grid inverters have a maximum rating depending on the system you start with. This upper value cannot be breached, i.e. 2000 watt inverter means that it will disconnect when the load goes over 2000 watts, for example, all your lights, LCD flat screen TV and supplementary items would equate to approx 400-500 watts continuous power.

You can keep expanding it as with all our systems.

Wind Turbines using an off-grid system: as there is a storage system in our off-grid connections, the financial feasibility of wind turbines used in conjunction with them is good. You can double or treble your wind power over time by using more than one of our micro Jetstreams and while you increase your power outage, they still are maintenance free domestic systems. Our wind systems are directly connected to the storage system for full benefit of energy produced. The best off-grid grid systems are solar photovoltaic or solar/wind hybrid systems.

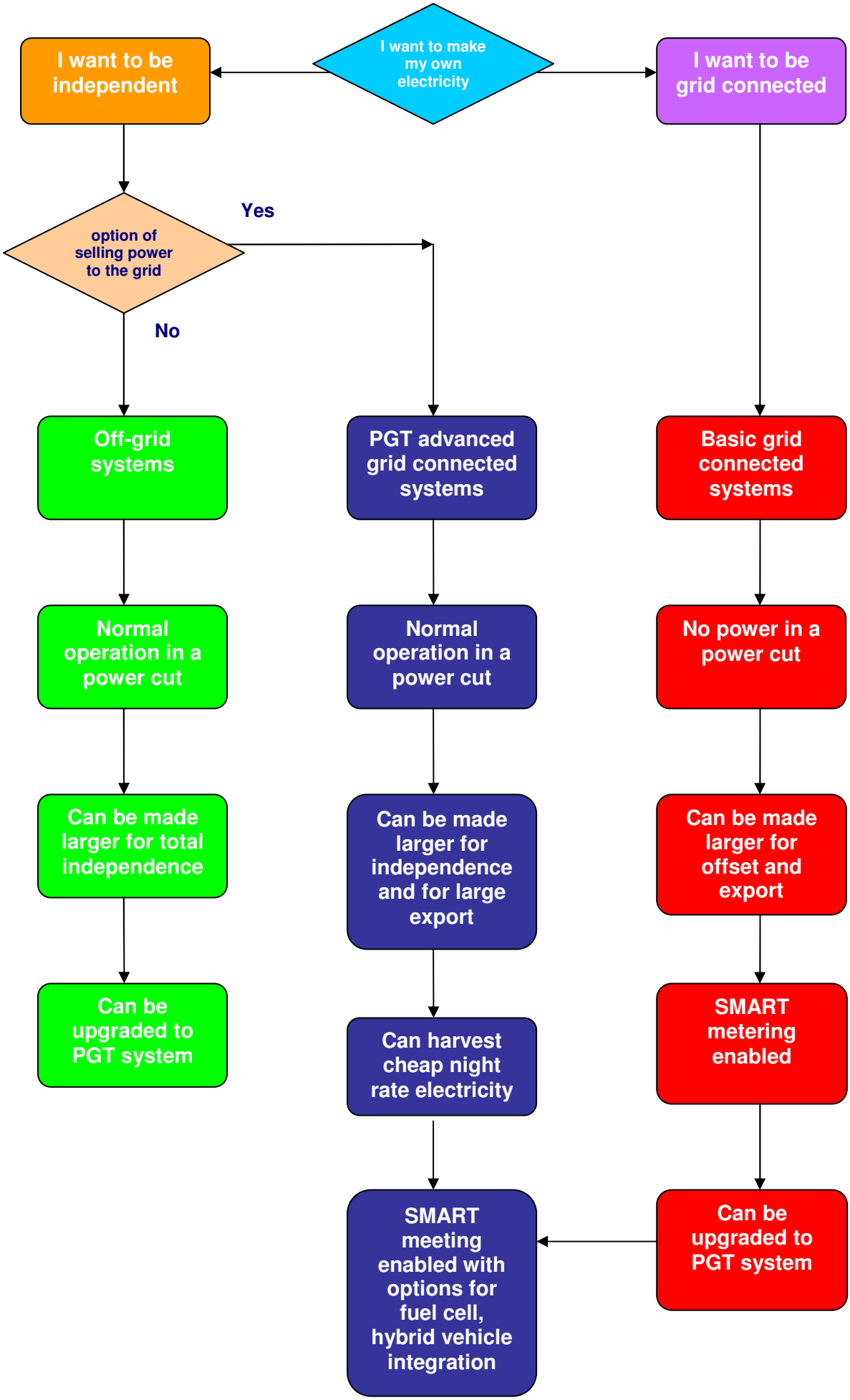
Wind Turbine Note: our standard domestic micro Jetstream turbines are the only maintenance free systems. Our larger wind turbine systems are subject to commercial type installations and are not suitable for domestic installations due to their significant installation requirements and blade size.

Larger turbines also have noise ratings to consider.

System specifications

Type	kWh(p)	Type of connection	Wind Turbine	Solar Array	Storage system	Inverter	Works in power cut	Country approvals
SolarPack 1	0.6 kW(p)	Off-grid	N/A	Yes	Yes	No	Yes	EU
SolarPack 2	1.0 kW(p)	Off-grid	N/A	Yes	Yes	No	Yes	EU
SolarPack 3	1.6 kW(p)	Off-grid	N/A	Yes	Yes	No	Yes	EU
SolarPack 4	2.4 kW(p)	Off-grid	N/A	Yes	Yes	No	Yes	EU
Jetstream 1	0.930 kW(p)	Off-grid	460 watt 730 watt controller option available also	Yes	Yes	No	Yes	EU
Jetstream 2	1.330 kW(p)	Off-grid	460 watt 730 watt controller option available also	Yes	Yes	No	Yes	EU
Jetstream 3	2.060 kW(p)	Off-grid	2 x turbines 460 watt 730 watt controller option available also	Yes	Yes	No	Yes	EU
Jetstream 4	2.460 kW(p)	Off-grid	2 x turbines 460 watt 730 watt controller option available also	Yes	Yes	No	Yes	EU
Custom systems	????	Off-grid	2 x turbines 460 watt 730 watt controller option available also	Yes	Yes	No	Yes	EU
	Please note wind turbines and additional solar panels, storage and inversion units can be added at any stage. All the above systems are balanced for off-grid use. Additional outputs should not be added unless additional inputs are added. Holiday homes are the exception to this rule.							
Very important note: Wind cannot be used off-grid on its own as it is not a natural conditioner of battery systems. Conditioning must be provided by solar photovoltaic (best), generator, or the national grid.								

How to choose a system
to suit you



Wind Turbine information
micro Jetstream turbine

Description

Surface Power's micro turbine is designed to connect to our off-grid solar systems and our PGT grid connected systems.

These turbines are designed for high wind conditions in Ireland & Scotland. Systems are straight forward to install and mount on a standard street light pole or other customised mounting with a blade diameter of 1.8 metres.

Systems come with a choice of two controllers, Jetstream one producing 460 watt/h (p) and Jetstream two producing 730 watt/h (p)

System comes with electromagnetic braking as standard with a straight forward installation in domestic situations.

Irish Sustainable Building SHOW 2006
Winner - New Product of the Show award 2006

iwea

Approved Member of
éASCA
ENVIRONMENTAL & SUSTAINABLE CONSTRUCTION ASSOCIATION

www.surfacepower.com

Appendix 2: SERVE D3.2Report on Phase 1 of RES Retrofitting Actions

Project Acronym: SERVE
REF EC: (Project Number) TREN07/FP6EN/S.07.71106/038382
REF (project coordinator org.):
DOCUMENT:
REF.:

Project Coordinator: Seamus Hoyne
Project coordination org.: Tipperary Rural and Business Development Institute
Date: 8th December 2008
Revision: Final

Deliverable Report
Deliverable No.: 3.2
Work Package No: 3

CONCERTO INITIATIVE
SERVE

Sustainable Energy for the Rural Village Environment

Report Title:

Report on Phase 2 Retrofitting Renewable Energy Demonstration Actions.

Date: 06/11/2009

Author: North Tipperary County Council

Version: 1.1

CONCERTO is co-funded by the European Commission

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1 Executive Summary

Work Package 3 was launched in Month 20 (July 2009) in conjunction with Phase 2 of Work Package 1. This launch was over a year behind schedule due to SERVE working in conjunction with Sustainable Energy Ireland's Home Energy Saving Scheme.
Work Package 3 offered grant aid to home and building owners for the installation of renewable energy measures. These measures included solar flat plates and evacuated tubes, wood stove/inserts, wood heating systems and wind/pv demonstration systems. A number of homeowners availed of the grants but no non residential building has implemented renewable measures to date.

In the case of solar panels and wood heating systems, applicants had to use a contractor and product on Sustainable Energy Ireland's Greener Homes Scheme Registered List of Installers and Product List. For wood stoves/inserts applicants had to use a SERVE register.

A detailed application process was developed for both the residential and non residential scheme and it was launched on June 3rd 2009. The scheme was promoted in a number of ways including press, media, web, mailings and information meetings.

To date 37.7 KW have been installed with another 36.1KW works in progress under the wood stove/insert target and 32m^2 of solar panels have been installed with another 16 m^2 works in progress.

2 Introduction

This report covers the activities relating to Work Package 3 from months 13 to 24. Work Package (WP) 3 was launched in conjunction with WP 1 in month 20. Work Package 1 focuses on energy efficiency measures and Work Package 3 focuses on renewable energy measures. To be eligible for grants for renewable measures, a building needs to have achieved a specific level of energy efficiency via supports from SERVE or prove that it meets SERVE energy standards. As a result a lot of work package 3 applicants initially came through work package 1.

Phase 1 of the SERVE grant scheme ran in Year 1 and focused on WP1 only. The reason for this was that the SERVE grant scheme worked in conjunction with Sustainable Energy Ireland's Pilot Home Energy Savings Scheme (HESS). There were grants for attic insulation, wall insulation, heating controls etc. It was agreed to postpone the launch of WP3 until Year 2 so that the focus could be on bringing buildings up to a high energy efficiency level and ensuring that there was a stock of houses eligible to apply for work package 3.

The launch for Phase 2 was planned for early 2009. This was a launch of both energy efficiency and renewable energy grants but the timings were impacted on by the National roll out of the Home Energy Saving Scheme. The national roll out in 2009 resulted in the SERVE Grant Scheme being unable to proceed as planned because this €50 million funded scheme mirrored the proposed SERVE Energy Efficiency Grant Scheme. As a result the SERVE grant scheme launch was delayed. This included the WP 3 renewable energy grant scheme. The Scheme was finally launched in Month 20 – July 2009.

The SERVE Residential Renewable Energy Grants were available to homeowners who had an existing C1 rating on their home. Grants were available for solar flat plates and evacuated tubes, wood stoves/inserts, wood heating systems and wind/PV demonstration systems.

The SERVE Non Residential Grant Scheme was available to buildings that were at least 100m^2 and had an annual heating spend of at least €1,000. The building would also need to carry out energy efficiency measures and have a combined energy saving of 40% or more. The measures that were grant aided were based on the results of an energy audit of the building carried out by Tipperary Energy Agency.

There was a Scheme Launch in Month 20 and subsequent promotion was done in the following months. Phase 2 will run through until Month 26. Phase 3 of the SERVE Renewable Energy Grant Schemes will be defined in Month 24 and 25.

3 The SERVE Renewable Energy Grant Scheme

3.1 Residential Grant Scheme

Renewable Energy Grants were available to homeowners under the SERVE Project who had an existing C1 Energy Rating on their home. Homeowners who had attained this rating under the Energy Efficiency Grants Scheme were automatically eligible. Other householders were required to complete an Energy Audit Section on the Application Form (Appendix.1). This was reviewed by Tipperary Energy Agency to determine if the house had a C1 Energy Rating. If anything on the application form was unclear, inspections would have been carried out by Tipperary Energy Agency to establish this energy rating or to confirm details on the application form.

The following renewable energy measures were are grant aided by North Tipperary County Council:

Grant Measure	Grant Amount
Solar Flat Plates	€100 per ^{m2}
Solar Evacuated Tubes	€150 per ^{m2}
Wood Stoves/Inserts (wood burning only)	€650
Wood Heating Systems	€3,500

Figure 3-1: SERVE Residential RES Grant Supports

Wind/PV Systems were also grant aided but this process was managed by Surface Power Technologies who have a separate application process. Applicants were made to Surface Power via the Green Loans Scheme. The first phase involved a site survey after which an offer for implementation of a micro generation project was made. Promotion of the micro generation scheme started in June 2009 also.

3.2 Register of Suppliers/Installers

In the case of Solar Flat Plates/Evacuated Tubes and Wood Heating Systems, homeowners had to use a contractor and product on Sustainable Energy Ireland's Greener Home Scheme Registered List of Installers and Product List.

For Wood Stoves/Inserts, the homeowner had to use a contractor on the SERVE Register of Suppliers/Installers (Appendix 2). This register was forwarded to relevant homeowners at the Letter of Offer Stage. The Register of Suppliers and Installers contained:

- Installer/Supplier Name
- Type of service/products provided
- Company contact details

During the development of the register of suppliers for wood stoves it emerged that there is considerable market confusion with regard to what is being marketed as a wood stove in Ireland at present. Key difficulties arose in the following areas:

- Suppliers selling wood only stoves as 'solid fuel' stoves to ensure that they can maximise market share
- Lack of knowledge from suppliers with regard to what is a wood stove and relevant standards required

The TEA has produced a report outlining the range of issues associated with the promotion and installation of wood stoves in Ireland. This report has been submitted to Sustainable Energy Ireland and a definition of wood stoves has been developed by SEI, based on the TEA report, which has been integrated into the national DEAP methodology for completion of BERs.

3.3 Application Process

3.3.1 Expression of Interest:

Homeowners contacted North Tipperary County Council with their Name and Address (by phone, e-mail or in person). The location of the building was checked for eligibility and if they met the criteria an Information Pack was sent out. Alternatively building owners could download the pack from www.servecommunity.ie.

Homeowners who achieved a C1 through Phase 1 or Phase 2 of the SERVE Energy Efficiency Grant Scheme automatically received a pack.

3.3.2 Information Pack:

The Information Pack included:

a.) Information Guide
b.) Application Form
d.) Technical Guide
e.) Bill Data Authorisation Forms

These documents can be found in Appendix 3.

3.3.3 Application:

The homeowner then returned the Application Form with either a BER Reference Number or a completed questionnaire and the signed Energy Data Authorisation Forms to North Tipperary County Council.

3.3.4 Technical Review and Grant Offer:

Tipperary Energy Agency then reviewed the BER or questionnaire and if the house was eligible, a Grant Offer was made by North Tipperary County Council. This Grant Offer consisted of the Letter of Offer, the Terms and Conditions, and an Acceptance of Offer Form (Appendix 4) The homeowner returned a signed Acceptance of Offer Form within 3 weeks of the date of the Letter of Offer. North Tipperary County Council signed the Acceptance of Offer Form and returned it to the homeowner with a Request for Payment Form. Works could then begin.

3.3.5 Declaration of Works:

On completion of works, the contractor and the homeowner completed and signed the Declaration of Works Form(s). These detailed the measure(s) implemented and the standard to which they were completed. Grant payment was dependent on this Declaration of Works Form.

3.3.6 Request for Payment:

The homeowner requested payment from North Tipperary County Council by sending in the Request for Payment Form, the Declaration of Works Form, Original Invoices and Original Receipts for the works carried out. Tipperary Energy Agency will inspect works in 20% of the houses.

3.3.7 Technical Certification and Grant Payment:

If all documentation was in order, and the renewable energy measures installed to the required standards, North Tipperary County Council paid the homeowner the relevant grant amounts.

4 Non Residential Grant Scheme

4.1 Grant Measures

The following measures were grant aided under Work Package 3 for Non Residential Buildings. The standard required and the grant levels are also included:

Grant Measure	Grant Amount	Standard Required
Solar Flat Plates - SERVE only	€100 per m^2	European Solar Keymark certification
Solar Evacuated Tubes - SERVE only	€150 per m^2	European Solar Keymark certification
Solar Flat Plates/Tubes - SERVE & ReHeat	ReHeat + SERVE grant level - Up to a maximum of 40% of eligible costs	European Solar Keymark certification
Wood Stoves	€650	Wood Burning Only Must conform to one of the following standards - EN 13240 - Art. 15a - NS 3038/59 - EN 13229
Wood Heating Systems - SERVE only	€3,500	Must conform to the following standards - EN 303-5
Wood Chip/Pellet (does not include wood gasification boilers) - SERVE & ReHeat	ReHeat + SERVE grant level - Up to a maximum of 40% of eligible costs	Must conform to the following standards - EN 303-5

Table 4-1: SERVE Non Residential Grant Measures

Wind/PV Systems were also grant aided but this process was managed by Surface Power Technologies which has a separate application process (see section 3.0).

4.2 Application Process and Documentation

4.2.1 Expression of Interest:

Building owners contacted North Tipperary County Council with their Name and Address (by phone, e-mail or in person). Location and the age of the building were checked for eligibility. The building had to be at least 100m^2 and have an annual heating spend of €1,000 to be eligible. If they met the criteria an Information Pack was sent out. Alternatively building owners could download the pack from www.servecommunity.ie

4.2.2 Information Pack:

The Information Pack included

a.) Information Guide
b.) Application Form
d.) Technical Guide
e.) Bill Data Authorisation Forms

The Information Guide and Application Form can be found in Appendix 5.

4.2.3 Application and Energy Assessment:

The building owner/applicant submitted the Application Form and the Energy Data Waivers to North Tipperary County Council. Evidence of building ownership status, legal status (if applicable), tax compliance and insurance etc. was also required. The information was sent to Tipperary Energy Agency who then completed the Energy Assessment on the building at a time and date agreed with the building owner/applicant.

4.2.4 Request for Grant Offer:

A report was generated from this assessment and this was sent with a Request for Grant Aid Form to the building owner from North Tipperary County Council. This Request for Grant Aid Form detailed the measures specific to that building and the predicted energy saving. (Appendix 6)

4.2.5 Grant Offer

The building owner/applicant selected the measures required and then returned the form to North Tipperary County Council. This Grant Offer consisted of the Letter of Offer, the Terms and Conditions and an Acceptance of Offer Form. The building owner returned a signed Acceptance of Offer Form within 3 weeks of the date of the Letter of Offer. 3 quotes for the planned works had to be returned with the Acceptance of Offer if the amounts were greater than €5,000. North Tipperary County Council signed the Acceptance of Offer Form and returned it to the building owner with a Request for Payment Form. Works could then begin.

No requests for payment were made in before October 2009 (Month 24) but the following steps are in place for the request for payment

4.2.6 Request for Payment:

On completion of works the building owner requests payment from North Tipperary County Council by sending in the Request for Payment Form, as well as Original Invoices and Original Receipts for the works carried out. C2 details or Tax Clearance Certificate of the contractor(s) need to be supplied also.

4.2.7 Grant Payment:

Tipperary Energy Agency will then carry out an inspection and if the energy upgrades are completed to the required standards and all documentation is in order, North Tipperary County Council will pay the building owner the relevant grant amounts.

5 Promotion of the Scheme

The scheme was promoted through a range of means and methods. The promotional campaign comprised of the following

a) press release and adverts at initial launch (June 2009) and during scheme
b) information evenings and energy seminars – June and July 2009
c) use of SERVE, NTCC and TEA Websites
d) email communication to relevant groups
e) promotion via relevant newsletters

5.1 Promotion Launch

5.1.1 Press Releases and Adverts

There were two strands to the initial press campaign – Press Releases and Adverts. The press campaign focused on two regional papers in the SERVE area. The first paper was the Nenagh Guardian which targeted the whole of the SERVE region. The Midland Tribune was also utilised to target building owners in the east and north east of the SERVE region.

Press Release
A press release and photo appeared on the Nenagh Guardian and Midland Tribune for the launch of the SERVE Scheme. It included details of the SERVE region, funding from the EU under the Concerto programme, the grant measures (residential and non-residential), the information evening and how to apply to the scheme.

Press Adverts
An advert was run in the Nenagh Guardian and the Midland Tribune for the launch of the SERVE Project phase 2. It included details of the SERVE region, funding from the EU under the Concerto programme, the grant measures (residential and non-residential), the information evening and how to apply.

The Guardian

SERVE Energy Grant Schemes expand into Nenagh

North Tipperary County Council and Tipperary Energy Agency have re-opened the SERVE (Sustainable Energy for the Rural Village Environment) Project Energy Grant Scheme for 2009 following the successful roll-out of the pilot SERVE/Home Energy Saving Scheme in 2008. Phase 2 of the SERVE Project now offers Energy Grant Schemes for residential and non-residential buildings in the SERVE region, which has been expanded in 2009 to include Nenagh town. The region currently covers Toomevara, Ballymackey, Cloughjordan, Ballingarry, Riverstown, Rathcabbin, Redwood, Lorrha, Terryglass, Dromineer, Borrisokane, Ardcroney and their surrounding areas. Funded under the EU Concerto Programme, the SERVE Project aims to upgrade existing homes and buildings from an energy efficiency and renewable energy point of view.

Under the Residential Energy Grant Scheme homeowners can avail of grant aid to upgrade attic insulation, wall (cavity fill, internal, external) insulation, windows, and install heating controls and lighting, high efficiency boilers and cylinders. Eligibility requirements are that houses must be located in the SERVE region and built pre 2006. Grant-aid is also available for renewable energy measures such as wood stoves and boilers, solar panels and wind/photovoltaic systems. A house must have a C1 energy rating or higher to be eligible for grant-aid for renewable energy measures.

There will be an Information Session and Energy Seminar on the SERVE Project Residential Grant Scheme at 8pm on the 9th June in the Abbey Court Hotel, Nenagh. Details of the grants available and information and advice about energy efficiency measures and renewable energy measures will be addressed at this event.

The Non-Residential Energy Grant Scheme caters for commercial, public, community, recreational, cultural, and schools buildings. The building must be located in the SERVE region, must be at least 100m2 and have an annual heating spend of at least €1,000. An energy assessment will be carried by Tipperary Energy Agency and grants will be offered based on the results of this assessment. Grant-aided measures include the energy efficiency upgrades of attic and wall insulation, heating controls, windows, high efficiency boiler and cylinders and lighting controls and upgrade as well as renewable measures such as Wood Stoves, Solar Panels, Wood Gasification Boilers and Wind/PV Demonstration Systems.

To register your interest in the SERVE Project Grant Scheme or for further information on the schemes in the SERVE region, please contact North Tipperary County Council on 067 44671 or log on to www.servecommunity.ie. Closing date for Expressions of Interest is June 30th.

Pictured above are Clive and Meryl Gillespie, Glenard House, Cloughjordan, who had energy efficiency works carried out on their home which were supported under Phase 1 of the SERVE Energy Grant Scheme 2008. This picture was taken during a recent site visit by the SERVE Project partners. Left to right: Clive Gillespie, Meryl Gillespie, Seamus Hoyne, Tipperary Institute & Tipperary Energy Agency; Leo Monk, Energy Consulting Network; Harald Svendsen, EDannect; Sheila Healy, North Tipperary County Council, Attracta Lyons, North Tipperary County Council; Jim Cods, CIRCA Group; Velentir Segon, REGEA Ltd.; Julia Demso, REGEA Ltd.

Comhairle Contae Thiobraid Árann Thuaidh
North Tipperary County Council

ENERGY GRANT SCHEMES SERVE PROJECT

North Tipperary County Council invites Expressions of Interest from Residential and Non-Residential Building Owners under Phase 2 of the SERVE Project Energy Grant Schemes. The SERVE (Sustainable Energy for the Rural Village Environment) Project, funded under the EU Concerto Programme, aims to create a rural community which is a leading example in both energy efficiency and renewable energy. The SERVE region has expanded in 2009 to include Nenagh Town along with Toomevara, Ballymackey, Cloughjordan, Ballingarry, Riverstown, Rathcabbin, Redwood, Lorrha, Terryglass, Dromineer, Borrisokane, Ardcroney and surrounding areas.

Residential Grant Scheme

Grant-aid is available to homeowners in the SERVE region for the following energy efficiency and renewable energy measures:

Energy Efficiency Measures
- Attic & Wall Insulation
- Heating Controls
- Windows
- High Efficiency Boilers
- Lighting Upgrades and Controls
- High Efficiency Cylinders

Renewable Energy Measures
- Solar
- Wood Stoves
- Wood Gasification Boilers
- Wind/PV Demonstration Systems

Information Session and Energy Seminar

An information session on the SERVE Residential Grant Scheme and an Energy Seminar on Energy Efficiency Measures and Renewable Energy will be held on:

Tuesday 9th June – The Abbey Court Hotel, Nenagh – 8pm

Non-Residential Grant Scheme

These grants are open to owners of Commercial, Community, Sports Buildings and Schools. Buildings must be located in the SERVE region, be at least 100m² and have an annual heating spend of €1,000 minimum. Grant offers will be based on the findings of an energy assessment carried out by Tipperary Energy Agency. The grant measures are as follows:

Energy Efficiency Measures
- Attic & Wall Insulation
- Heating Controls
- Windows
- High Efficiency Boilers
- Lighting Upgrades and Controls
- High Efficiency Cylinders

Renewable Energy Measures
- Solar
- Wood Stoves
- Wood Gasification Boilers
- Wind/PV Demonstration Systems

To register your interest and for further information on the above schemes, log on to www.servecommunity.ie or call the Community & Enterprise Department, North Tipperary County Council, Civic Offices, Limerick Road, Nenagh. Tel. 067 44671.

CLOSING DATE: Tuesday 30th June, 2009.

SERVE

Aerial Page 622 Website: www.tipperarynorth.ie

"Working with the Community"

Figure 5-1: Press Cutting from Launch

5.1.2 Radio Campaign

A 30 second radio advert was created for the SERVE project. There were 2 sets of 10 day campaigns booked with the local radio station, Tipperary FM. The campaigns had 5 adverts a day over the 10 days and the adverts ran at various times to ensure all sections of the community were targeted. Campaign 1 ran from 3/6/09 to 12/6/09 and Campaign 2 ran from 17/6/09 to 26/6/09.

5.1.3 E-mail campaign

There were 2 e-mail campaigns carried out to promote the SERVE Project launch. An e-mail, focusing on the residential sector, was sent to all employees and elected representatives in North Tipperary County Council to inform them about the launch of the SERVE Project North Tipperary County Enterprise Board sent a mail to their approx. 600 clients to inform them of the supports under the Non-Residential scheme.

5.1.4 Postal Mailing

A commercial postal mailing was also used to promote the Non Residential Grant Scheme. The database was created by North Tipperary County Council and was based on buildings that would require a high heat load such as hotels, nursing homes, schools etc. This mailing contained an information guide, technical guide and an application form. The initial mailing consisted of 87 packs being sent out.

In addition to this targeted mailing, general information on the SERVE Non Residential Grant Scheme was sent to a further 80 business on Enterprise Ireland's mailing list.

A postal mailing was also used for the Residential Sector. An Information Pack was sent 83 people who had made queries prior to the launch. Information was also sent to Active Retirement Associations and I.C.A. groups in the area, as well as the Citizens Information Office.

Sustainable Energy Ireland Mailing
Sustainable Energy Ireland sent a letter to each eligible applicant, from North Tipperary, to the Home Energy Saving scheme, informing them about the SERVE Grant Scheme. The initial mailing was to 70 applicants.

5.1.5 Internet

Promotion on the internet focused on the SERVE website www.servecommunity.ie. North Tipperary County Council also promoted the scheme on its website. The main home page announced the launch and there was a link to the Community and Enterprise page and www.servecommunity.ie . The TEA also promoted the grants via its website (www.tea.ie).Further details available in Deliverable 8.9.

5.1.6 Newsletters

EIST
A newsletter called "Eist" is distributed to all serving and retired council employees once a month with their payslip. The June edition had information on the SERVE Project on the cover page.

Church Newsletters
Information about the SERVE Project and Information Evening was sent to parish priests for inclusion on their newsletter in the following areas throughout the duration of SERVE Project Phase 2:

- Puckane
- Lorrha
- Borrisokane
- Nenagh
- Cloughjordan
- Terryglass

5.1.7 Information Evenings and Energy Seminar

A range of information evenings and energy seminars were organised to inform people of the supports and provide opportunities to meet with contractors and suppliers in the scheme. These events were promoted via the press, newsletters, email communications, posters and via relevant websites. The first event took place in the Abbey Court Hotel on the 9th June 2009. Tipperary Energy Agency and North Tipperary County Council presented the SERVE Grant Scheme's background, objectives, grant measures and application process to members of the public. There were a number of contractors there also. There were over 50 people in attendance. The event was promoted through press releases and adverts. There was also posters placed in areas around Nenagh such as shopping centres, the library, the post office, community buildings and in businesses that had a high number of employees. 33 packs were distributed at the Information Evening.

Follow up information evenings were held in Borrisokane Community College on the 8th July and in The Abbey Court Hotel on the 9th July. Tipperary Energy Agency and North Tipperary County Council presented at these information evenings. Contractors also had stands at the information events.

Figure 5-2: Information Evenings

Big savings available to North Tipp homeowners

Substantial Energy Grants For Homeowners

Figure 5-3: Press Releases after Information Evenings

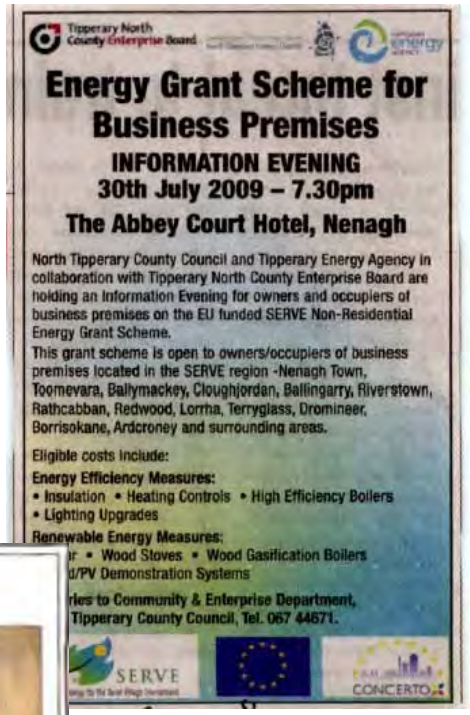
5.1.8 Public Display

The Tipperary Energy Agency also produced a range of posters and case studies on the scheme and these were put on public display in the North Tipperary County Council Offices.

5.1.9 Non Residential Information Evening

A specific event for the Non-Residential sector was held in conjunction with Tipperary North County Enterprise Board in the Abbey Court Hotel on the 20th July. This event was promoted as follows:

- via postal and email contact with relevant groups including
  - A postal mailing was sent to all business on the SERVE mailing list telling them of the Information Evening.
  - An e-mail was sent from the North Tipperary County Council to all its members.
  - A subsequent e-mail was sent to Enterprise Ireland's Development Agents.
  - Information was also sent to local banks and credit unions.
  - This scheme was also promoted at various relevant meetings at which North Tipperary County Council attended.
  - There was a series of press adverts and press releases in the Nenagh Guardian and Midland Tribune


Tipperary North County Enterprise Board

Energy Grant Scheme for Business Premises

INFORMATION EVENING
30th July 2009 – 7.30pm
The Abbey Court Hotel, Nenagh

North Tipperary County Council and Tipperary Energy Agency in collaboration with Tipperary North County Enterprise Board are holding an Information Evening for owners and occupiers of business premises on the EU funded SERVE Non-Residential Energy Grant Scheme.

This grant scheme is open to owners/occupiers of business premises located in the SERVE region -Nenagh Town, Toomevara, Ballymackey, Cloughjordan, Ballingarry, Riverstown, Rathcabban, Redwood, Lorrha, Terryglass, Dromineer, Borrisokane, Ardcroney and surrounding areas.

Eligible costs include:

Energy Efficiency Measures:
• Insulation • Heating Controls • High Efficiency Boilers
• Lighting Upgrades

Renewable Energy Measures:
• Wood Stoves • Wood Gasification Boilers
d/PV Demonstration Systems

ries to Community & Enterprise Department, Tipperary County Council, Tel. 067 44671.

SERVE CONCERTO


Information evening on reducing energy costs

Pictured at the recent Information Evening on the SERVE Energy Grant Scheme for Business Premises run by North Tipperary County Council and Tipperary Energy Agency in conjunction with Tipperary North County Enterprise Board are left to right: Sheila Healy, North Tipperary County Council, Paul O'Brien, Solarergy Ltd, Sinéad Daly Tipperary Energy Agency, Attracta Lyons, North Tipperary County Council, Peter Ward, Nenagh Manor Nursing Home, Ronan Smyth, Club Insulation, Robert Sheehan, Marianne & Sheehan. Grants are available to non residential buildings in the SERVE region that are over 100m2 and have annual heating spend of at least €1,000. For further information on the SERVE Energy Grants, contact North Tipperary County Council on 067 44671

Figure 5-4: Press Cuttings from Non Residential Promotional Events

5.1.10 Sustainable Energy Ireland

Sustainable Energy Ireland also contacted all those from North Tipperary who applied to the HES Scheme. In total 182 letters were sent to these applicants informing them about the project and additional supports available under SERVE.

6 Results to date

6.1 Residential

- Approximately 25 Expressions of Interest were made and each person received an Information Pack. In addition to expressions of interest made to North Tipperary County Council, some applicants downloaded the information from www.servecommunity.ie. The majority of applicants came through Phase1 or Phase 2 of the Energy Efficiency Grants Scheme.
- 30 applications were made.
- 3 applicants were ineligible.
- Out of the 27 eligible applicants – 25 Letters of Offer were sent out and the other 2 are awaiting confirmation of C1 status.
- 5 people did not or could not proceed to the Acceptance of Offer stage.
- Out of the 20 remaining applicants – there have been 17 Acceptances of Offer and answers are awaited an answer from the other 3 applicants.
- There have been 9 Requests for Payment with at least a further 11 due in before Mid December
- 8 Payments have been made to date.

6.2 Non Residential

- North Tipperary County Council and TEA drew up a list of potential business that would benefit from the SERVE Non Residential Grant Scheme. A pack was sent to all these businesses. Packs were also sent to any business who expressed an interest in the scheme. In total 117 packs were distributed.
- There have been no applications to date from non residential buildings for renewable grants but there are a number of key projects which are being discussed and developed further with clients.

6.3 Targets and Implementation

The following table outlines the current status of implementation.

Work Package 3	**Target KW**	**KW to date**	**Committed KW**	**Possible KW**	**Required KW**
Wood Stoves	2600	37.7	36.1	13.5	2512.7
Wood Boiler	900	0	0	0	900
	Target m^2	**m^2 to date**	**Committed m^2**	**Possible m^2**	**Required m^2**
Solar	400	32.5	16	12	339.5
	Target kW	**KW to date**	**Committed KW**	**Possible KW**	**Required KW**
Wind/PV					

Table 6-1: WP3 Progress on Targets

Monitoring of the initial installations will start in early 2010 via WP5. The metering and monitoring system which is being developed will also be applied to the renewable energy installations where technically possible.

7 Conclusions

Work Package 3 was launched on Month 20 so it is over 1 year behind schedule and well below targets. The delays were outside of the control of the project partners and every effort is now being made to make up time and achieve the overall targets. There are a number of options being reviewed with the EU Commission for Phase 3 of the SERVE Grant Supports to help achieve these targets

1. Increasing the period for implement from Month 36 to Month 48 to make up for the delays in implementing the WP

2. Removing the energy efficiency requirement for people to apply for RES Retrofitting Grants to maximise the market available for the installations
3. Re-allocation of capacity from wood stoves and individual boilers to a number of larger scale projects biomass heating projects
4. Micro Generation targets being increased and change contract to allow more suppliers provide products
5. Complete scoping study of potential for inclusion of Anaerobic Digestion project within the SERVE project

The next phase of supports will be launched in January 2010 with an active push towards implementation of actions.

Appendix 1: SERVE Residential RES Application Form

SERVE

Sustainable Energy for the Rural Village Environment

SERVE Project Grant Scheme Residential Section

Application Form for Renewable Energy Grants

IMPORTANT NOTICE

It is the responsibility of each applicant to the SERVE Grant Scheme to ensure that they have read, and fully understood the Information Guide, the Terms & Conditions and the Application Form before submitting a signed Application Form. Failure to fully adhere to the provisions of the Information Guide, the Terms & Conditions and the Application Form will result in application refusal, grant revocation or payment request refusal, depending on the particular status and stage of the grant.

North Tipperary County Council and its partner Tipperary Energy Agency do not, in any way, warrant or guarantee the products or services provided by any of the suppliers/installers listed. No liability or responsibility whatsoever will attach to North Tipperary County Council and/or Tipperary Energy Agency whether for breach of contract, negligence or otherwise, in respect of any claim or cause of action arising out of, or in relation to, any equipment, product, work, system or installation in respect of which grant approval was given by North Tipperary

This Application Form may be revised periodically. Call 067 44671 or visit www.servecommunity.ie to ensure that you have the latest version.

Version 2.0

Comhairle Contae Thiobraid Árann Thuaidh
North Tipperary County Council

The SERVE Project is funded by the European Commission under its Concerto Programme

CONCERTO

TIPPERARY energy AGENCY

Section 1: Applicant Details

Name_____

Address_____

_____

_____

Mobile number_____

Landline Number_____

Do you have broadband internet access ☐ Yes ☐ No

E-mail Address_____

Section 2: Property Details

(if different from above)

Address_____

_____

_____

_____

Is the building a listed building? Yes ☐ No ☐

Section 3: Renewable Energy Grants

The SERVE Renewable Energy Grants Scheme is open to homeowners who have an existing C1 rating on their home or who have upgraded their home under SERVE Energy Efficiency Grant Scheme to this standard. If you have not upgraded your home under the SERVE Energy Efficiency Grant Scheme, please answer the following questions to determine your eligibility. Please note a follow up inspection may be required.

3.1 Audit of House:

What is the year of construction of your house? _____

1. House Description:

No of Stories: _____

What type of house do you have?

Detached ☐

Semi-detached ☐

Ter- ☐ raced

2. Windows:

How many windows do you have: _____

How many are double glazed: _____

3. Walls:

What type of wall do you have?

A.) Solid wall ☐
B.) Cavity construction ☐
C.) Cavity Block (hollow Block) ☐

Have you added extra wall insulation (cavity fill or dry lining). Yes ☐ No ☐

If yes, describe what was done (year, method, % of total walls to which insulation was added):

_____

_____

4. Insulation:

What is the depth of your current attic insulation? _____mm

5. Heating Controls:

How many of each of the following Heating Control Measures do you have in your house?

Time clock (integrated programmer) ____

Thermostat for space heating ____

Thermostat for hot water (on side of cylinder) ____

Thermostatic radiator valves (5 settings on radiators) _____

6. Heating System

What is your main heating system?

A.) Boiler ☐
B.) Range ☐
C.) Stove ☐
D.) Other - Please Describe ☐

_____

What is approximate year of installation of Boiler/ Range/ Stove? _____

What is your main heating fuel? _____

Do you have any existing renewable energy supply? Yes ☐ No ☐

If yes, please detail_____

3.2 Grant Measures

Please tick the measures for which you wish to apply:

	Grant Measure	**Grant Amount**	**Please tick**
1	Solar Flat Plates	€100 per m^2	
2	Solar Evacuated Tubes	€150 per m^2	
3	Wood Stoves/Inserts (wood burning only)	€650	
4	Wood Chip/Pellet Heating Systems	€3,500	
5	Wind/PV Demonstration Systems	These grants are managed by Greenloan on behalf o Surface Power. Please contact www.greenloan.ie or call 1850 336 336 for more information.	

Section 4: Applicant Declaration and BER Confirmation

4.1 Applicant Declaration

- I confirm that I am the building owner referenced in this Application Form and that the building is permanently occupied and is an existing home.
- I confirm that the house is in the SERVE region.
- I understand that if I apply for the SERVE Renewable Grant, my home must be at a C1 Energy Rating and this will be determined by a BER or the information supplied on this application form and a possible subsequent inspection of my house.
- I understand In the case of Solar Flat Plates/Evacuated Tubes and Wood Heating Systems, I must use a contractor on Sustainable Energy Ireland's Greener Home Scheme Registered List of Installers.
- I understand that for Wood Stoves/Inserts, I must use a contractor from the SERVE Register of Suppliers/Installers.
- I understand that to avail of the SERVE Renewable Energy Grants I need to provide pre and post upgrade energy data and may be required to allow monitoring equipment to be installed in my home.
- I understand that grants will not be paid for purchases made or works commenced before the signed Acceptance of Offer has been returned by North Tipperary County Council to me.
- If my building is selected, I agree to participate in the on-line monitoring programme or have monitoring equipment installed.
- I understand that if I accept the grant offer, all works must be carried out and request for payment made before Mid-October 2009.

_____ _____

Signature Date

4.2 BER Authorisation Declaration

If you have a BER, please fill out the Reference Number and sign the Authorisation below:

BER Reference Number:_____

BER Assessor Name:_____

- I authorise my BER Assessor to pass full details of my BER to Tipperary Energy Agency and/or North Tipperary County Council.
- I authorise the viewing of my BER details by Tipperary Energy Agency and/or North Tipperary County Council for the purposes of the SERVE Project Grant Scheme.
- If my BER was carried out before the SERVE Grant Scheme launch date of 3rd June 2009, I agree to an inspection of my house by Tipperary Energy Agency

_____ _____

Signature Date

Section 5: Contact Details

Please return completed application form to:

SERVE Project Grants Scheme
Community & Enterprise Department
North Tipperary County Council
Civic Offices
Limerick Road
Nenagh
Co Tipperary

For further information:

Telephone: 067 44671
E-mail: sheila.healy@northtippcoco.ie
Web: www.servecommunity.ie

Appendix 2: Register of Suppliers

SERVE
Sustainable Energy for the Rural Village Environment

Supplier/Installer	Contact Details	
Heatcraft		
Unit 9, Block F **Axis Business Park** **Tullamore**	**057 9352572** **www.heatcraft.ie** **info@heatcraft.ie**	Supra Tertio 54, 55, 64, 67, 69, 74, 76, 79, Supra Tertio 67 VL1, 67 VTL2, 76 VL1, 76 VL2 Supra Tertio 540 V, 550 V, 640 V, 670 V, 690 V, 740 V, 760 V, 790 V
Ryan Stoves Ltd		
Burgess **Nenagh** **Co. Tipperary**	**067 42709** **www.ryanstoves.ie** **ryanstoves@eircom.net**	Charnwood Country 4, Charnwood Country 6, Charnwood Country 8, Charnwood Country 12 Charnwood Cove 1, Charnwood Cove 2, Charnwood Cove 3 Charnwood Island 1, Charnwood Island 2, Charnwood Island 3 Intrepid II Models 1990, 1991, 1997, 1998, 1999, 2000, 30070, 30072, 30073, 30074 Morsø 1410, Morsø 1430 UK, Morsø 3110, Morsø 3140, Morsø 3410 Romotop Stromboli, Merida, Riano, Cotopaxi, Astorga Stovax Riva 40 Cassette, Stovax Riva 44 Cassette, Stovax Riva 66 Cassette, Stovax 66 Avanti

IMPORTANT **Only wood burning stoves or the wood burning variant of a multi fuel stove will be grant aided.**

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North Tipperary County Council

TIPPERARY energy AGENCY

Please Note: This register is being updated on a regular basis and Wood Stove Suppliers/Installers can register by calling North Tipperary County Council on 067 44671 or logging on to www.servecommunity.ie. Your Wood Stove Supplier/Installer and your chosen Wood Stove/Insert must be listed on this register for grants to be paid

Appendix 3: Residential Information Guide

The Information Pack included:

a.) Information Guide
b.) Application Form
d.) Technical Guide
e.) Bill Data Authorisation Forms

SERVE

Sustainable Energy for the Rural Village Environment

SERVE Project Residential Grant Scheme

Information Guide for Renewable Energy Grants

IMPORTANT NOTICE

It is the responsibility of each applicant to the SERVE Grant Scheme to ensure that they have read, and fully understood this Information Guide, the Terms & Conditions and the Application Form before submitting a signed Application Form. Failure to fully adhere to the provisions of this Information Guide, the Terms & Conditions and the Application Form will result in application refusal, grant revocation or payment request refusal, depending on the particular status and stage of the grant.

No liability or responsibility whatsoever will attach to North Tipperary County Council and/or Tipperary Energy Agency whether for breach of contract, negligence or otherwise, in respect of any claim or cause of action arising out of, or in relation to, any equipment, product, work, system or installation in respect of which grant approval was given by North Tipperary County Council under the SERVE Project Grants Scheme.

This Information Guide may be revised periodically. Call 067 44671 or visit www.servecommunity.ie to ensure that you have the latest version
Version 2.0

The SERVE Project is funded by the European Commission
under its Concerto Programme

Comhairle Contae Thiobraid Árann Thuaidh
North Tipperary County Council

CONCERTO

TIPPERARY energy AGENCY

Contents

1. Background to the SERVE Project

The European Commission, under its Concerto Programme, is aiding the creation of several Sustainable Energy Areas throughout Europe. An area of North Tipperary has been approved funding as part of this Concerto Programme. A key part of this Sustainable Energy for the Rural Village Environment Project (SERVE) is the upgrading of 500 existing homes and buildings from an energy efficiency point of view. In order to make this a reality North Tipperary County Council, with its partner Tipperary Energy Agency, will deliver a Grant Scheme to residential and non residential building owners to upgrade their properties. The technologies covered in the SERVE Grant Scheme will focus on increasing the energy efficiency of homes and buildings, and where this has been done, providing homes and buildings with a renewable energy heating source.

The SERVE Project aims to create a sustainable energy area in North Tipperary. The SERVE project has the following key objectives.

- Create a region in North Tipperary which is a leader in the implementation of sustainable energy actions.
- Reduce the energy consumption in 500 existing homes and buildings by improving their energy performance.
- Develop a eco-village with 132 houses in Cloughjordan which showcases energy efficient design an a renewable energy district heating system.
- Increase the use of renewable energy technologies through supporting the installation of renewable energy heating systems and demonstrating the use of electricity from micro wind systems.
- Utilise technical and socio-economic expertise from European Partners to monitor performance and impacts in the region and to disseminate the results widely.

2. SERVE Region

The SERVE region is located in an area of North Tipperary that covers:

Nenagh Town	Ballymackey	Cloughjordan
Ballingarry	Riverstown	Rathcabbin
Redwood	Lorrha	Terryglass
Dromineer	Borrisokane	Ardcroney
Toomevara (within the village boundaries)		

Eligibility is determined by DED (District Electoral Division) and if you require further information regarding the SERVE region or your eligibility, contact Community and Enterprise Department, North Tipperary County Council on 067 44671 or sheila.healy@northtippcoco.ie.

3. Grant Details

The SERVE Grants are divided into Energy Efficiency Grants and Renewable Energy Grants. This information guide deals specifically with the SERVE Renewable Energy Grant.

The house must have been occupied for at least one year before application and have an existing heating system.

SERVE Renewable Energy Grants

There are Renewable Energy Grants available to homeowners under the SERVE project who have an existing **C1 Energy Rating** on their home. Homeowners who have attained this rating under the Energy Efficiency Grants Scheme are automatically eligible. Other householders are required to complete the Energy Audit Section on the Application Form. This will be reviewed to determine if the house has a C1 Energy Rating. Inspections may be carried out by Tipperary Energy Agency to establish this energy rating or to confirm details on the application form.

The following renewable energy measures are grant aided:

Solar Thermal Panels/Tubes - Used to heat water for either space or hot water heating. Both flat plate and evacuated tube systems will be supported. Homeowners may also apply for grant aid under Sustainable Energy Ireland's Greener Homes Scheme.

Wood Stoves/Inserts **- Solid (logs <u>not</u> pellets) wood** burning stoves to replace existing open fires. The SERVE Project promotes a move from the use of energy inefficient open fires to high efficiency wood stoves. The funding is focused particularly on wood stoves and will not support multi-fuel stoves.

Wood Heating Systems - Full pellet/wood gasification boiler systems replacing the traditional boiler. Homeowners may not apply for grant aid under Sustainable Energy Ireland's Greener Homes Scheme.

Wind/PV Demonstration Systems - The SERVE project supports a small number of wind/ photovoltaic systems. These grants are managed by Surface Power as partners in the project.

<u>The grant levels for the SERVE Renewable Energy Grants are as follows:</u>

Grant Measure	Grant Amount
Solar Flat Plates	€100 per m^2
Solar Evacuated Tubes	€150 per m^2
Wood Stoves/Inserts (wood burning only)	€650
Wood Heating Systems	€3,500
Wind/PV Demonstration Systems	These grants are managed by Greenloan on behalf of Surface Power. Please contact www.greenloan.ie or call 1850 336 336 for more information.

4. Register of Contractors/Suppliers

In the case of Solar Flat Plates/Evacuated Tubes and Wood Heating Systems, homeowners must use a contractor on Sustainable Energy Ireland's Greener Home Scheme Registered List of Installers.

For Wood Stoves/Inserts, the homeowner will have to use a contractor on the SERVE Register of Suppliers/Installers. This register will be forwarded to relevant homeowners at the Letter of Offer Stage. The Register of Suppliers and Installers contains:

- Installer/Supplier Name
- Type of service/products provided
- Company contact details

Important: North Tipperary County Council and its partners Tipperary Energy Agency do not, in any way, warrant or guarantee the products or services provided by any of the suppliers/installers listed. No liability or responsibility whatsoever will attach to North Tipperary County Council or its partners whether for breach of contract, negligence or otherwise, in respect of any claim or cause of action arising out of, or in relation to, any equipment, product, work, system or installation in respect of which grant approval was given by North Tipperary County Council under the SERVE Project Grant Scheme.

In order to receive grant payment, the applicant must supply North Tipperary County Council with a completed "Declaration of Works" which the installer/supplier should sign once the work is completed. The homeowner must also sign this document

5. Application Process

1. The homeowner submits an Expression of Interest, online on www.servecommunity.ie or by calling North Tipperary County Council on 067 44671.
2. North Tipperary County Council sends out a SERVE Grant Scheme Information Pack to eligible homeowners.
   Eligibility is defined by the age and the location of the house. The SERVE Pack will contain the Information Guide, the Technical Guide, the Energy Data Authorisation Form and the Application Form.
3. The homeowner returns the Application Form (with the BER Reference Number if applicable) and the signed Energy Data Authorisation Forms to North Tipperary County Council. These should be returned **within 2 weeks** of receipt the SERVE Grants Scheme Information Pack
4. Tipperary Energy Agency will review the energy audit questions or the BER and if the house is eligible (i.e. at a C1 energy level), a Grant Offer will be made by North Tipperary County Council. A Grant Offer consists of the Letter of Offer, the Terms and Conditions and an Acceptance of Offer Form. Ineligible applicants will be notified. An inspection by Tipperary Energy Agency may be required to evaluate the house.
5. The Homeowner returns a signed Acceptance of Offer Form to North Tipperary County Council within 3 weeks of the date of the Letter of Offer
6. North Tipperary County Council signs the Acceptance of Offer Form and returns it to the homeowner with a Request for Payment Form and a Declaration of Works Form. Works may then commence.
7. On completion of works, the contractor and the homeowner completes and signs the Declaration of Works Form. This details the measure (s) implemented and the standard to which they were completed. Grant payment will be dependent on this Declaration of Works Form.
8. The homeowner requests payment from North Tipperary County Council by sending in the Request for Payment Form, the Declaration of Works Form, Original Invoices and Original Receipts for the works carried out.
9. Tipperary Energy Agency will inspect at least 20% of the houses.
10. If all documentation is in order, the renewable energy measures implemented and confirmation of same by Tipperary Energy Agency, North Tipperary County Council will issue relevant grant payment.
11. All works must be carried out and request for grant payment submitted before Mid-October 2009.

6. Inspection

North Tipperary County Council and its partner Tipperary Energy Agency reserve the right to inspect any works carried out under the SERVE Project Grant Scheme. All completed installations may be subject to inspection. Properties may be the subject of a sampling process and building owners will be notified prior to the inspection. Inspections will be carried out at a time agreed by the building owner and the agency. Grant payment will be made upon satisfactory inspection.

7. Energy Data & Monitoring

7.1 Provision of Energy Bills

One of the requirements of the SERVE Project is to reduce the energy used and the CO^2 emissions in the region. This energy load for the region will be quantified by analysing energy data from

before and after the works have been completed. The Tipperary Energy Agency requires at least two years of pre-upgrade and two years of post-upgrade energy data. (In the case of applicants that have been in the house for less than 2 years, one years pre-upgrade data will be sufficient). The applicant will be requested to sign a Pre and Post Authorisation Form authorising Tipperary Energy Agency to request the data directly from the homeowners energy supplier.

Failure to sign the Authorisation Form will result in ineligibility for the grant scheme.

7.2 Energy Monitoring

Under the SERVE Project Grant Scheme, there is a requirement to monitor the energy consumption of a number of the homes and buildings upgraded. The buildings to be monitored will be at the discretion of the auditors. Monitoring of houses may require a certain amount of equipment installed in a number of houses for a period of 2 years. The following parameters (some or all) will be required to be monitored:

- Oil consumption via a flow meter into a boiler
- Interior temperature(s) via a wireless sensor located in the house
- Electricity consumption via a wireless sensor in the meter box
- Domestic hot water consumption
- Hot water production from installed solar panels
- Hot water production from installed wood stoves or boilers

These installations will be unobtrusive as possible, all sensors will be wireless and there will be no permanent fixings. In the case of the oil meter and hot water flow meter, the meter will have to be installed in the pipe.

8. Terms and Conditions

- The applicant must be the owner of the home, which must be located in the SERVE region in respect of which the grant application is made (not applicable to mobile homes, caravans, houseboats or other temporary dwellings).
- The applicable house must have been built pre 2006.
- All works must be carried out and request for grant payment made before Mid-October 2009.
- The applicant must carry out all measures identified in the Letter of Offer.
- All relevant work carried out must comply with current planning requirements, particularly those requirements pertaining to protected structures and houses in Architectural Conservation areas.
- The applicant must obtain all necessary consents, permissions and statutory approvals and have authority to install the measures in his/her home.
- The applicant's agreement with North Tipperary County Council in the event of an Acceptance of Offer being signed will comprise of the Information Guide, the Letter of Offer and the Terms and Conditions. The applicant shall comply with and agree to be bound by the provisions of these documents.
- Approval of the grant only becomes valid on receipt by the homeowner of the signed copy of the Acceptance of Offer Form from North Tipperary County Council.
- The applicant must secure approval from North Tipperary County Council before assuming he/she will receive the grant. North Tipperary County Council reserves the right to reject/ approve applications to the SERVE Grant Scheme.
- The applicant must ensure that no purchase of materials or works commencement has occurred prior to the Acceptance of Offer being signed by the applicant and North Tipperary County Council.
- A grant is only payable if all works indicated in the Acceptance of Offer Form are completed as specified.
- The applicant must sign an Authorisation Form to allow Tipperary Energy Agency to obtain pre upgrade and post upgrade energy usage information.
- The applicant must allow the Tipperary Energy Agency, or their authorised agents, install energy monitoring devices in an agreed place for the purpose of monitoring the energy consumption of the home, if selected to be a monitored home.

- The applicant must engage a contractor on the list of Registered Suppliers/Installers or a contractor from Sustainable Energy Ireland's Greener Home Scheme Registered List of Contractors where applicable.
- The timing of the payment of the grant to approved applicants is subject to the funding allocated by the EU to the Scheme in a particular year. Where all conditions are met, payment will be made on a "first come, first served" basis. Where funding is exhausted in a particular year, payment to remaining applicants will be deferred until such a time as further funds is available. Deferred payments will receive priority, if and when those funds become available.
- The homeowner must facilitate any reasonable request made by the local authority requiring the contractor to return to the house in order to make good any works deemed not to meet the standards of the SERVE Grant Scheme
- North Tipperary County Council and/or Tipperary Energy Agency accepts no liability or responsibility, whether for breach of contract, negligence or otherwise, in respect of any dispute, claim or cause of action arising out of, or in relation to, any product (or its suitability), any materials (or their suitability), equipment (or its suitability), work, system, service, specification, standard, installation or the qualification or performance of the contractor in respect of which grant approval or payment was given by North Tipperary County Council. No undertaking, guarantee, assurance or other warranty, express or implied, is given by North Tipperary County Council, or any of its agents or servants, in respect of the cost, quality, efficiency and/or benefit of any work, equipment, materials, product, service or installation provided under the SERVE Grant Scheme.
- The information provided herein and on the www.servecommunity.ie is provided solely for the purpose of providing assistance to the home owner in contracting suppliers/installers, and is not intended to warrant or guarantee the quality of the product and/or the installation chosen by the grant applicant. No undertaking, guarantee, assurance or other warranty, express or implied, is given by North Tipperary County Council and/or Tipperary Energy Agency or any of its agents or servants, in respect of the cost, quality, efficiency and/or benefit of any work, equipment, product, service or installation provided under the Scheme. The fact of registration on the list of Registered Contractors for the Scheme does not infer any warranty or endorsement of that product or contractor by North Tipperary County Council and/or Tipperary Energy Agency.
- In the event of any breach of the Terms and Conditions of the SERVE Project Grant Scheme or the Letter of Offer or the Acceptance of Offer by the applicant and where the applicant has received payment pursuant to the Scheme, North Tipperary County Council shall, amongst its remedies against the applicant, be entitled to demand the complete repayment of the grant payment and the applicant agrees to comply with any such demand within one month of the date of the letter from North Tipperary County Council containing such demand.
- The applicant shall follow the North Tipperary County Council complaints procedure in relation to any disputes between the applicant and North Tipperary County Council concerning any matter in connection with the Scheme.
- All data received from applicants by North Tipperary County Council and Tipperary Energy Agency will be subject to Data Protection and will only be used for the purposes of the SERVE Project. This may include sharing of applicant information with SEI for the purposes of linkages between this scheme and the Home Energy Savings Scheme and/or the Greener Home Scheme administered by them.
- There will be a need for dissemination activities including case studies, site visits, media and other materials etc. Individual homeowners will be asked for permission to use their home for these purposes.

9. Contact

For further information, please contact:

Community & Enterprise Department
North Tipperary County Council
Civic Offices
Limerick Road
Nenagh
Co. Tipperary

067 44671
sheila.healy@northtippcoco.ie
www.servecommunity.ie

SERVE

Sustainable Energy for the Rural Village Environment

Technical Guide

Tipperary Energy Agency and North Tipperary County Council wish to acknowledge the input to this guide from Sustainable Energy Ireland's Home Energy Saving scheme Technical Guide

This Technical Guide may be revised periodically

TIPPERARY energy AGENCY

CONCERTO

Comhairle Contae Thiobraid Árann Thuaidh
North Tipperary County Council

Table of Contents

1. Solar Water Heating:

Key Solar Facts and Tips
Solar Panels, also known as solar collectors are devices usually located on the roofs of dwellings but can also be installed at ground level, provided it is not shaded. They use the sun's heat to warm water, or another fluid, which is pumped through the panel. The fluid is then fed to a heat store (e.g. a hot water tank) and provides hot water or a source of hot water for central heating for your home. Solar panels work throughout daylight hours, even if the sky is overcast and there is no direct sunshine. Solar panels can also be used to contribute to space heating demand. The cost of a professionally installed solar system for heating hot water can vary greatly. If you are considering investing in this technology you should research the products to ensure that you are getting the best system for your needs and value for money.

The Benefits of solar water heating
- Reduction in heating bills
- Increased comfort levels
- Reduction in Greenhouse Gas emissions

1.1 Flat plate Solar Collector
A flat plate collector consists of a thin plate called an absorber backed by a grid or coil of fluid tubing and placed in an insulated casing with a glass or transparent plastic cover
The fluid is circulated, using either mains or solar electricity, through the tubing to remove the heat from the absorber and to transport it to an insulated water tank, sometimes directly or otherwise to a heat exchanger or to some other device for using the heated fluid.
Most flat plate collectors have a life expectancy of 20 - 25 years.

1.2 Evacuated Tube Solar Collector
Evacuated tube collectors are made of a series of modular tubes mounted in parallel. This type of collector consists of rows of parallel transparent glass tubes, each of which contains an absorber tube (in place of the absorber plate to which metal tubes are attached in a flat-plate collector). In some cases, the tubes are covered with a special light-modulating coating. In an evacuated tube collector, sunlight passing through an outer glass tube heats the absorber tube contained within it. The absorber can either consist of copper (glass-metal) or specially-coated glass tubing (glass-glass). The glass-metal evacuated tubes are typically sealed at the manifold end, and the absorber is actually sealed in the vacuum, thus the fact that the absorber and heat pipe are dissimilar metals creates no corrosion problems. Foam insulation is used in the manifold.

Location
The optimum location for solar panel collectors for all year round energy collection is roughly south facing and at a tilt angle of 30°- 45° to the horiz ontal (however angles between 15° and 60° are also acceptable). It is also important that the collectors are positioned so there are no shadows on them during the middle of the day. Shading can be from the collectors themselves, or from trees, chimneys, part of the building or adjacent buildings.

Controller
After commissioning, a permanent power supply should be provided for the solar controller to ensure circulation in the system.

Water Storage Cylinder
An appropriately sized cylinder should be chosen for the house. The volume of your solar hot water cylinder is related to the solar panel area and the maximum cylinder temperature. It is recommended that the hot water tank has 50 - 80 litres of water per square metre of solar panel area, and it is supplied and at a maximum cylinder temperature of 80 – 90 ℃. Smaller capacities will limit the benefit from the system and may lead to frequent overheating of the solar circuit. Generally Dual Coil Cylinders should be used, having the coils at the top and bottom of the cylinder. The solar collector circuit should be connected to the bottom coil and the auxiliary circuit

to the top coil, which will enable the solar system to pre-heat in cold weather. Your installer will be able to help you choose an appropriately sized cylinder for your system.

Thermostatic Anti-Scald Valve
Best practice calls for the fitting of a thermal mixing (anti-scald) valve. This applies to all hot water systems and not just solar heated water systems. With the current recommendation to store hot water at 60℃ to prevent the growth of Legionella b acteria it is becoming more of a consideration to install thermal mixing valves. A thermal mixing valve mixes cold and hot water together to ensure the water temperature is safe for people to use.

System Components

- A solar collector which absorbs sunlight and changes it into heat
- A pump which transfers the heat from the collector to hot water in the storage cylinder
- The storage tank accumulates the hot water produced by solar energy so that it can be stored for use when needed
- A back-up heater (gas, oil, or wood fueled boiler, immersion heater or heat pump) which will bring the hot water to the temperature required when there is not enough sunlight to do so.

In Ireland, solar collectors alone cannot provide all the hot water for a household's needs throughout the year. Correctly sized they will supply 60% of heat or domestic hot water needs. They are normally installed in conjunction with a conventional back-up heating system.

2. Wood Stoves / Inserts

A wood stove is a space heater i.e. intended to heat a space directly, unlike a central heating boiler which supplies its heat to the house through a system of pipe work. A wood stove is an economical wood heating option. A stove can be located anywhere there is enough space and where its flue can be properly routed. A perfect installation has the stove located centrally in the main floor living area of the house and the flue pipe running straight up into the chimney. This installation design will provide the best performance and will require the least amount of maintenance.

Stove inserts are also available on the market which fit directly into an existing fireplace or hearth. These are available as pellet or wood burning types. However only log burning stove inserts are grant aided under the SERVE Energy Grant Schemes.

Benefits

Replacing your boiler with a log stove will:

- Allow you to use locally sourced sustainable wood fuel
- Reduce your heating bills
- Reduce Greenhouse Gas emissions
- Increase comfort levels in your home.

Quality Stoves

There are many stoves on market that conform to various quality standards. A good quality stove will conform to the **European Standard EN13240/13229**. Stoves that do not meet this standard are not eligible under the scheme. Stoves must also reach a rated efficiency of 70%. Most high quality brands will exceed this standard. **Care must be taken to ensure your stove meets the above standard.**

Air Supply

A stove must have a secure air supply for safe operation (see Part J of the current Building Regulations – go to www.environ.ie). This can be either in the form of a controlled dedicated air supply directly to the appliance, or in the form of a permanent ventilation opening to the room in which the appliance is located. Best practice is to rely upon dedicated ventilation and not on air infiltration or leakage into the room. The size of the opening depends on the size of the appliance. Your installer should be able to size this correctly. In addition, extractor fans may interfere with the operation of the appliance causing smoke to escape out of the appliance into the surrounding area so please consult with your installer.

Flues

The flue is used for the exhaust of the stove. It can be installed through a chimney or outside the building. The flue must be installed to current Building Regulations. (Part J, check www.environ.ie). If installed outside the building some things to look for would be:

- It is above the eaves line by 1metre or 600mm if coming out near the roof apex.
- It is double walled and insulated.
- It has a cowl on top to prevent downdraughts.
- It should be separated from any possible combustible material.

3. Wood Heating Systems

3.1 Wood Pellet Boilers:

Key Facts & Tips
Modern wood pellet boilers offer the warmth and comfort of wood heating while being highly efficient, clean burning and totally automatic, saving you time and money. Pellet boilers are automatically lit and continue to operate without manual intervention. Automatic fuel supply and thermostat means you can relax and enjoy the comfort of pellet heating at the switch of a button. Automatic ignition means that lighting the boiler is convenient and easy. Most modern pellet boilers are self cleaning so daily cleaning is avoided. The ash pan needs to be emptied bi-weekly, or less frequently, depending on models.

Benefits
Replacing your boiler with a wood pellet boiler will:
- Reduce your heating bills
- Reduce Greenhouse Gas emissions
- Increase comfort levels in your home

How do I know if I need a new Boiler?
You can do a quick check on your boiler requirements by answering the questions below. If you answer YES to all or the majority of these questions it would be beneficial for you to further investigate installing a new high efficiency boiler
- Was my current boiler installed over 10 years ago?
- Has my heating bill been increasing in recent years?
- Is my current boiler too big for my needs? (Are there less people in my house now, do I need less heat and hot water?)

Bulk Fuel Storage:
Biomass boiler installations require the provision of bulk storage. It shall be required to meet local building and fire regulations. The ONORM M7137 Standard (http://onnorm.at/ecom/) shall be used as a guideline for DIY bulk storage units. Bulk storage capacity shall be able to store a minimum of 3 tonnes of wood pellets (80% of a typical house's requirement for one year).

Buffer Heat Store
It is a recommendation that a buffer or accumulator tank be installed as part of domestic wood pellet boiler system installations where appropriate. A buffer or accumulator cylinder in a domestic wood pellet heating installation is a primary heat storage/distribution cylinder, which is heated by the boiler to a set temperature and can store the resulting hot water for long periods while the system is idle, until heating or hot water is required. A buffer reduces the on/off cycling of wood boilers by "smoothing" the heat output to the dwelling. The buffer capacity should be calculated in accordance with your manufacturer's recommendations. A rough guideline for establishing the volume of the buffer is available from EN303-5 and from the REIA training manual and is in the region of 55 to 65 Litres / kW of the rated boiler size.

The use of a buffer should be considered in the following situations:
- Where the boiler does not have full modulation capabilities, the use of a buffer will smooth the heat output to the dwelling.
- In situations where the boiler is not capable of supplying the full heat demand of the house, a buffer tank will allow the boiler to run for longer at optimum efficiency extracting maximum potential from the boiler and fuel.

Air Supply
A boiler must have a secure air supply for safe operation (see Part J of the current Building Regulations – go to www.environ.ie). This can be either in the form of a controlled dedicated air supply directly to the appliance, or in the form of a permanent ventilation opening to the room in which the appliance is located. Best practice is to rely upon dedicated ventilation and not on air infiltration or leakage into the room. The size of the opening depends on the size of the appliance.

Your installer should be able to size this correctly. In addition, extractor fans may interfere with the operation of the appliance causing smoke to escape out of the appliance into the surrounding area so please consult with your installer.

Flues
The flue is used for the exhaust of the boiler. It can be installed through a chimney or outside the building. The flue must be installed to current Building Regulations. (Part J, check www.environ.ie). Some things to look for would be:

- It is above the eaves line by 1metre or 600mm if coming out near the roof apex.
- It is double walled and insulated.
- It has a cowl on top to prevent downdraughts.
- It is separated from any combustible material.

Boiler sizing
If you decide to install a wood pellet boiler, please be sure to ask your supplier about the boiler size (i.e. kW rating). An oversized boiler can be very wasteful of energy. If you have recently upgraded your insulation or glazing for example, a like for like replacement may not be the most suitable solution for you.
It is vital that you ask the relevant installer to ensure that the quotation provided is for an installation which achieves an efficiency ≥ 85% as required under the SERVE Energy Grant Scheme.

3.2 Wood Gasification Boilers:

Key Facts & Tips
A wood gasification boiler is a central heating boiler which produces its useful heat through combustion of wood gas (from wood logs). This gas is produced by the thermal transformation of wood fuel i.e. the wood fuel is first converted to gas then the resulting charcoal is then also converted to gas.

A wood gasification boiler differs from a standard wood boiler by way of the combustion process. In a standard wood boiler, direct combustion of the wood fuel takes place, whereas in a wood gasification boiler, combustion of wood-gas takes place following thermal conversion of the wood fuel to gas.

Wood gasification boilers offer the warmth and comfort of wood heating while being automatic, highly efficient and clean burning, saving you time and money.

Benefits
Replacing your boiler with a wood gasification boiler will:

- Allow you to use locally sourced timber
- Reduce your heating bills
- Reduce Greenhouse Gas emissions
- Increase comfort levels in your home.

Buffer Heat Store
A buffer store will be installed in conjunction with your wood gasification boiler to ensure the efficient operation of your boiler. Buffer stores are important heat storage devices, especially for wood gasification boilers. These boilers can only be operated efficiently when combined with a buffer since controlled operation at part load is more difficult to achieve. This is due to the nature of the fuel (generally wood logs). Once combustion takes place, the fuel will continue to burn irrespective of whether the dwellings heat load is met. Consequently the buffer cylinder in a domestic biomass heating installation is the primary heat storage / distribution device, which is heated by the boiler to a set temperature and can store the resulting hot water for long idle periods, until heating or hot water is required. The buffer or accumulator capacity should be calculated in accordance with your manufacturer's recommendations. A rough guideline for establishing the volume of the buffer is available from EN303-5 and from the REIA training manual and is in the region of 55 to 65 L/kW of the rated boiler size.

Air Supply
A boiler must have a secure air supply for safe operation (see Part J of the current Building Regulations – go to www.environ.ie). This can be either in the form of a controlled dedicated air supply directly to the appliance, or in the form of a permanent ventilation opening to the room in which the appliance is located. Best practice is to rely upon dedicated ventilation and not on air infiltration or leakage into the room. The size of the opening depends on the size of the appliance. Your installer should be able to size this correctly. In addition, extractor fans may interfere with the operation of the appliance causing smoke to escape out of the appliance into the surrounding area so please consult with your installer.

Flues
The flue is used for the exhaust of the boiler. It can be installed through a chimney or outside the building. The flue must be installed to current Building Regulations. (Part J, check www.environ.ie). Some things to look for would be:

- It is above the eaves line by 1metre or 600mm if coming out near the roof apex.
- It is double walled and insulated.
- It has a cowl on top to prevent downdraughts.
- It is separated from any possibly combustible material.

Boiler sizing
If you decide to install a wood gasification boiler, please be sure to ask your supplier about the boiler size (i.e. kW rating). Sizing of Gasification boilers is completed quite differently to standard boilers and a supplier will be able to help you detail what the best size for your house is. An oversized boiler can be very wasteful of energy. If you have recently upgraded your insulation or glazing for example, a like for like replacement may not be the most suitable solution for you.
It is vital that you ask the relevant installer to ensure that the quotation provided is for an installation which achieves an efficiency ≥ 85% as required under the SERVE Energy Grant Scheme.

SERVE Project Grants Scheme

Oil Data Authorisation Form

Oil supplier name: _____
Oil supplier Address: _____
_____
_____

Re: Bill Data

Dear Sir/ Madam,

I _____ of address _____,
_____
_____
wish to allow the Tipperary Energy Agency, as partner in the SERVE Project Grants Scheme to have access to my oil consumption data from June 2006 to June 2009. This is to fulfil the monitoring and analysis requirement of the SERVE project.

Yours sincerely,

_____

Oil supplier name: _____
Oil supplier Address: _____
_____
_____

Re: Bill Data

Dear Sir/ Madam,

I _____ of address _____,
_____
_____
wish to allow the Tipperary Energy Agency, as partner in the SERVE Project Grants Scheme to have access to my oil consumption data from July 2009 to June 2012. This is to fulfil the monitoring and analysis requirement of the SERVE project.

Yours Sincerely,

_____

SERVE Project Grants Scheme

Electricity Data Authorisation Form

ESB Customer Supply,
National Customer Contact Centre,
Wilton,
Cork
Ireland **Re: Bill Data**

Dear Sir/ Madam,

I _____ of address _____,
_____
_____
and MPRN:_____ wish to allow the Tipperary Energy Agency, as partner in the SERVE Project Grants Scheme to have access to my electricity consumption data from June 2006 to June 2009. This is to fulfil the monitoring and analysis of the SERVE project.

Yours Sincerely,

_____

ESB Customer Supply,
National Customer Contact Centre,
Wilton,
Cork,
Ireland **Re: Bill Data**

Dear Sir/ Madam,

I _____ of address _____,
_____
_____
and MPRN:_____ wish to allow the Tipperary Energy Agency, as partner in the SERVE Project Grants Scheme to have access to my electricity consumption data from July 2009 to June 2012. This is to fulfil the monitoring and analysis of the SERVE project.

Yours Sincerely,

_____

Appendix 4: Residential Letter of Offer, the Terms and Conditions, and an Acceptance of Offer Form

NAME
ADDRESS 1
ADDRESS 2
ADDRESS 3Co. Tipperary

DATE

Your Reference Number is: 09 - xxx
(Please quote this number in all correspondence)

Re: SERVE Project Renewable Energy Grants Scheme

Letter of Grant Offer

Dear NAME,

Further to your application to the above scheme, I would like to confirm that you have been approved for grant aid. The Grant Aid is as follows:

	Measure	Grant Level
1	Solar Flat Plates	€100 per m^2
2	Wood Stoves/Inserts	€650

Special Condition
This grant is payable on the condition that a new boiler is installed. The installation of this boiler will result in an energy rating of a C1 and therefore eligibility for the SERVE Renewable Energy Grants. Proof of installation will be required at grant payment stage through the supply of invoices and receipts for the works carried out.

You are reminded that:-
- The Grant Offer is subject to the Terms and Conditions set out in Appendix 1.
- All works must be carried out and request for grant payment made within 3 months of the date on this letter.

Greener Home Scheme
Please ensure that you have grant approval from Sustainable Energy Ireland in place for the Solar Flat Plates before works commence.

Contractors
A contractor from Sustainable Energy Irelands Greener Homes Scheme Registered List must be used for the installation of the Solar Flat Plates

Request for Payment
In order to claim your Grant Request for Payment should be made to North Tipperary County Council when works are completed. To request payment the following documents should be submitted:

1. Completed “Request for Payment” Form
2. Original Contractor(s) Invoice(s)
3. Original Contractor(s) Receipt(s)
4. Declaration of Works Form signed by the Wood Stove Contractor
5. Declaration of Works Form signed by the Solar Installer

Please note the above documents will be forwarded to you once grant offer is accepted.

If you wish to avail of the grant please return a signed “Acceptance of Offer” Form. This will be signed by North Tipperary County Council and a copy will be returned to you for your records. Once you have received this copy, works can commence. We would request that you reply within 3 weeks of the date of this letter using the stamped addressed envelope provided.

If you have any questions or queries regarding the above points or enclosed forms, please contact Sheila Healy, Community & Enterprise Department, on 067 44671.

Yours sincerely,

_____

Matt Shortt,
Director of Services
Planning, Community & Enterprise

Appendix 1: Terms and Conditions

- The applicant must be the owner of the home, which must be located in the SERVE region in respect of which the grant application is made (not applicable to mobile homes, caravans, houseboats or other temporary dwellings).
- The applicable house must have been built pre 2006.
- All works must be carried out and request for grant payment made within 3 months of the date on the Letter of Offer.
- The applicant must carry out all measures identified in the Letter of Offer.
- All relevant work carried out must comply with current planning requirements, particularly those requirements pertaining to protected structures and houses in Architectural Conservation areas.
- The applicant must obtain all necessary consents, permissions and statutory approvals and have authority to install the measures in his/her home.
- The applicant's agreement with North Tipperary County Council in the event of an Acceptance of Offer being signed will comprise of the Information Guide, the Letter of Offer and the Terms and Conditions. The applicant shall comply with and agree to be bound by the provisions of these documents.
- Approval of the grant only becomes valid on receipt by the homeowner of the signed copy of the Acceptance of Offer Form from North Tipperary County Council.
- The applicant must secure approval from North Tipperary County Council before assuming he/she will receive the grant. North Tipperary County Council reserves the right to reject/approve applications to the SERVE Grant Scheme.
- The applicant must ensure that no purchase of materials or works commencement has occurred prior to the Acceptance of Offer being signed by the applicant and North Tipperary County Council.
- A grant is only payable if all works indicated in the Acceptance of Offer Form are completed as specified.
- The applicant must sign an Authorisation Form to allow Tipperary Energy Agency to obtain pre upgrade and post upgrade energy usage information.
- The applicant must allow the Tipperary Energy Agency, or their authorised agents, install energy monitoring devices in an agreed place for the purpose of monitoring the energy consumption of the home, if selected to be a monitored home.
- The applicant must engage a contractor on the list of Registered Suppliers/Installers or a contractor from Sustainable Energy Ireland's Greener Home Scheme Registered List of Contractors where applicable.
- The timing of the payment of the grant to approved applicants is subject to the funding allocated by the EU to the Scheme in a particular year. Where all conditions are met, payment will be made on a "first come, first served" basis. Where funding is exhausted in a particular year, payment to remaining applicants will be deferred until such a time as further funds is available. Deferred payments will receive priority, if and when those funds become available.
- The homeowner must facilitate any reasonable request made by the local authority requiring the contractor to return to the house in order to make good any works deemed not to meet the standards of the SERVE Grant Scheme
- North Tipperary County Council and/or Tipperary Energy Agency accepts no liability or responsibility, whether for breach of contract, negligence or otherwise, in respect of any dispute, claim or cause of action arising out of, or in relation to, any product (or its suitability), any materials (or their suitability), equipment (or its suitability), work, system, service, specification,

standard, installation or the qualification or performance of the contractor in respect of which grant approval or payment was given by North Tipperary County Council. No undertaking, guarantee, assurance or other warranty, express or implied, is given by North Tipperary County Council, or any of its agents or servants, in respect of the cost, quality, efficiency and/or benefit of any work, equipment, materials, product, service or installation provided under the SERVE Grant Scheme.

- The information provided herein and on the www.servecommunity.ie is provided solely for the purpose of providing assistance to the home owner in contracting suppliers/installers, and is not intended to warrant or guarantee the quality of the product and/or the installation chosen by the grant applicant. No undertaking, guarantee, assurance or other warranty, express or implied, is given by North Tipperary County Council and/or Tipperary Energy Agency or any of its agents or servants, in respect of the cost, quality, efficiency and/or benefit of any work, equipment, product, service or installation provided under the Scheme. The fact of registration on the list of Registered Contractors for the Scheme does not infer any warranty or endorsement of that product or contractor by North Tipperary County Council and/or Tipperary Energy Agency.
- In the event of any breach of the Terms and Conditions of the SERVE Project Grant Scheme or the Letter of Offer or the Acceptance of Offer by the applicant and where the applicant has received payment pursuant to the Scheme, North Tipperary County Council shall, amongst its remedies against the applicant, be entitled to demand the complete repayment of the grant payment and the applicant agrees to comply with any such demand within one month of the date of the letter from North Tipperary County Council containing such demand.
- The applicant shall follow the North Tipperary County Council complaints procedure in relation to any disputes between the applicant and North Tipperary County Council concerning any matter in connection with the Scheme.
- All data received from applicants by North Tipperary County Council and Tipperary Energy Agency will be subject to Data Protection and will only be used for the purposes of the SERVE Project. This may include sharing of applicant information with SEI for the purposes of linkages between this scheme and the Home Energy Savings Scheme and/or the Greener Home Scheme administered by them.
- There will be a need for dissemination activities including case studies, site visits, media and other materials etc. Individual homeowners will be asked for permission to use their home for these purposes.

SERVE Project Renewable Energy Grants Scheme
Acceptance of Offer

Your Reference Number is: 09 - XXX
(Please quote this number in all correspondence)

This Acceptance of Offer Form must be signed and returned within 3 weeks of the date on the letter of the grant offer to North Tipperary County Council using the stamped addressed envelope provided.

I, _____of the address
(Please insert name)
_____
(Please insert full address)
_____

_____

hereby accept the offer made by North Tipperary County Council in letter dated DATE of grant aided measures as follows:

	Measure	Grant Level
1	Solar Flat Plates	€100 per m^2
2	Wood Stoves/Inserts	€650

- One of the conditions of this grant-aid is that grant approval, indicated by the return of a signed copy of this Acceptance of Offer Form by North Tipperary County Council, must be in place prior to any commencement of purchase of materials or works undertaken.
- I confirm that no purchase of material or commencement of works has taken place.
- I understand that I must use a contractor on the SERVE Register on SERVE Register of Suppliers/Installers for wood stoves/inserts and a contractor on Sustainable Energy Ireland's Greener Home Scheme for solar panels.
- I also confirm that I have read and understood the Technical Guide, the Application Guide and Form and I have read and accept the Letter of Offer and the Terms and Conditions therein.

Signed: _____

Name: _____
(Block Capitals)

Date: _____

Signed on behalf of North Tipperary County Council by:

Signed: _____
Matt Shortt
Director of Services, Community & Enterprise

Date: _____

This Acceptance of Offer form will be signed by North Tipperary County Council and a copy returned to you for your records. Works can then commence on energy efficiency upgrading measures.

Appendix 5: Non Residential Information Pack

a.) Information Guide
b.) Application Form
d.) Technical Guide
e.) Bill Data Authorisation Forms

SERVE

Sustainable Energy for the Rural Village Environment

SERVE Project
Non Residential Grants Scheme

Information Guide

IMPORTANT NOTICE

It is the responsibility of each applicant to the SERVE Grant Scheme to ensure that they have read, and fully understood this Information Guide, the Terms & Conditions and the Application Form before submitting a signed Application Form. Failure to fully adhere to the provisions of this Information Guide, the Terms & Conditions and the Application Form will result in application refusal, grant revocation or payment request refusal, depending on the particular status and stage of the grant.

No liability or responsibility whatsoever will attach to North Tipperary County Council and/or Tipperary Energy Agency whether for breach of contract, negligence or otherwise, in respect of any claim or cause of action arising out of, or in relation to, any equipment, product, work, system or installation in respect of which grant approval was given by North Tipperary County Council under the SERVE Grant Scheme.

This Information Guide may be revised periodically. Call 067 44671 or visit www.servecommunity.ie to ensure that you have the latest version
Version 2.0

The SERVE Project is funded by the European Commission
under its Concerto Programme

Comhairle Contae Thiobraid Árann Thuaidh
North Tipperary County Council

CONCERTO

TIPPERARY energy AGENCY

Contents

Page Number

For further Information please contact:

Community & Enterprise
North Tipperary County Council
Civic Offices
Limerick Road
Nenagh
Co. Tipperary

067 44671
sheila.healy@northtippcoco.ie
www.servecommunity.ie

1. Background to the SERVE Project

The European Commission, under its Concerto Programme, is aiding the creation of several Sustainable Energy Areas throughout Europe. An area of North Tipperary has been approved funding as part of this Concerto Programme. A key part of this Sustainable Energy for the Rural Village Environment Project (SERVE) is the upgrading of 500 existing homes and buildings from an energy efficiency point of view. In order to make this a reality North Tipperary County Council, with its partner Tipperary Energy Agency, will deliver a Grant Scheme to residential and non residential building owners to upgrade their properties. The technologies covered in the SERVE Grant Scheme will focus on increasing the energy efficiency of homes and buildings, and where this has been done, providing homes and buildings with a renewable energy heating source.

The SERVE Project aims to create a sustainable energy area in North Tipperary. The SERVE project has the following key objectives.

- Create a region in North Tipperary which is a leader in the implementation of sustainable energy actions.
- Reduce the energy consumption in 500 existing homes and buildings by improving their energy performance.
- Develop a eco-village with 132 houses in Cloughjordan which showcases energy efficient design and a renewable energy district heating system.
- Increase the use of renewable energy technologies through supporting the installation of renewable energy heating systems and demonstrating the use of electricity from micro wind systems.
- Utilise technical and socio-economic expertise from European Partners to monitor performance and impacts in the region and to disseminate the results widely.

2. SERVE Region

The SERVE region is located in an area of North Tipperary that covers the following areas and their surrounds:

Nenagh Town	Ballymackey	Cloughjordan
Ballingarry	Riverstown	Rathcabbin
Redwood	Lorrha	Terryglass
Dromineer	Borrisokane	Ardcroney
Toomevara (within the village boundaries)		

Eligibility is determined by DED (District Electoral Division) and if you require further information regarding the SERVE region or your eligibility, contact Community and Enterprise Department, North Tipperary County Council on 067 44671 or sheila.healy@northtippcoco.ie.

3. Eligibility Criteria & Grant Requirements

- The building must be in the SERVE Region.
- The building must have been built pre 2006.
- The building must be at least 100m^2 and have an annual heating spend of €1,000 (minimum).
- Upgrading works identified will have to result in a 40% reduction in energy use for grant offer to be made.
- Evidence of Tax compliance (either a copy of a Tax Clearance Certificate or evidence of a C2) of applicant is required. (Not applicable for schools).
- In the case of a community/voluntary organisation legally incorporated as a company evidence of same is required. Also evidence of Charitable Status is required if applicable.
- Evidence of property, public & employers (where appropriate) liability insurance is required
- Evidence of Title or Lease or Interest in Building (whichever is applicable) is required.
- Buildings and proposed works must have required planning permission, particularly those requirements pertaining to protected structures and houses in Architectural Conservation areas.

- In the case of schools, applications must be made to the *Energy Efficiency Scheme for Schools* where applicable.
- Grantees must ensure that contractors appointed to carry out upgrading works have current tax compliance documents. At the request for payment stage, building owners will need to submit evidence of contractor's current tax compliance documents (Tax Clearance Certificate or C2 details). together with original invoices, receipts/evidence of payments..
- 3 Quotes for planned works costing more than €5,000 will need to be submitted with the Acceptance of Offer Form

4. SERVE Non Residential Grants Measures

4.1 Energy Efficiency Measures & Grant Levels

Attic Insulation - Installation of insulation in the roof cavity of the building. Final insulation must have a U-Value level of 0.13 W/m^2 K to be eligible for grant payment (equivalent to 300mm of Fibreglass insulation).

Wall Insulation - Pumped cavity fill insulation, internal insulation (dry lining) and external insulation. Final insulation must have a U-Value level of 0.27 W/m^2 K (or as near as practicable) . Installations outside this will require approval by Tipperary Energy Agency in advance of works commencing.

Heating controls - The addition of thermostatic radiator valves, thermostats and motorised valves to increase the efficiency of your heating system. The controls should be set up so that space heating and water heating can be controlled independently through time and temperature.

High Efficiency Fossil Fuel Boilers - In particular cases where the installation of a renewable energy heating system is not possible or appropriate, a high efficiency oil or gas boiler will be grant aided. These will only be grant aided if they meet a high efficiency and are part of an overall energy efficiency package including heating controls and upgraded insulation where appropriate.

Lighting - The replacement of inefficient lights with Compact Fluorescent Lights (CFLs), Light Emitting Diodes (LEDs) and high efficiency T5 tubular fluorescents can significantly reduce the electricity consumption within the building. Motion sensors and daylight sensors can also improve the efficiency with which the lights are utilized. The retrofitting of lights will only be grant aided when recommended in the Energy Assessment Report.

Important Notes:

Grant Measure	Standard Required	Grant Amount
Attic Insulation	U-Value level of 0.13 W/m^2 K or as near as practicable	30% of Eligible Costs
Cavity Fill Wall Insulation	U-Value level of 0.27 W/m^2 K or as near as practicable	30% of Eligible Costs
Internal Wall Insulation	U-Value level of 0.27 W/m^2 K or as near as practicable	30% of Eligible Costs
External Wall Insulation	U-Value level of 0.27 W/m^2 K or as near as practicable	30% of Eligible Costs
Heating Controls Upgrade	Space and Water heating independently controlled through time and temperature.	30% of Eligible Costs
High Efficiency Boiler with Heating Controls Upgrade	• Oil Boiler must be ≥94% Efficient • Gas Boiler must be ≥92% Efficient	30% of Eligible Costs
Lighting Upgrade	Low energy lights or lighting controls as per energy assessment findings	30% of Eligible Costs

<u>Important notes:</u> Maximum Grant Levels cannot exceed €17 per m^2 of building for all energy efficiency measures combined.

Eligible costs for grant aided measures are exclusive of VAT (where applicable). In cases where VAT is non recoverable confirmation of same from the Revenue Commissioners will be required.

4.2 Renewable Energy Measures & Grant Levels

The following renewable energy measures are grant aided:

Solar Thermal Panels/Tubes - Used to heat water for either space or hot water heating. Both flat plate and evacuated tube systems will be supported.

Wood Stoves/Inserts **- Solid (logs <u>not</u> pellets) wood** burning stoves/inserts to replace existing open fires. The aim of SERVE is to move from the use of energy inefficient open fires to high efficiency wood stoves/inserts. **Note the funding is focused particularly on wood stoves/inserts and will not support multi-fuel stoves.**

Wood Heating Systems - Full pellet/wood gasification boiler systems replacing the traditional boiler. (A wood gasification boiler differs from a standard wood boiler by way of the combustion process i.e. it produces its useful heat through combustion of wood gas from wood logs)

Wind/PV Demonstration Systems - The SERVE Project supports a small number of wind/ photovoltaic systems. These grants will be managed by Greenloan on behalf Surface Power as partners in the project.

<u>Please note — Renewable Heat Deployment (ReHeat) Programme:</u> Sustainable Energy Ireland administers a grant scheme for commercial, industrial, services, public sector buildings and ESCO installations called the ReHeat Programme. Applicants can apply for grant aid from ReHeat Programme **<u>and</u>** SERVE Energy Grant Scheme for solar panels and wood chip/pellet heating systems.

If applying to the Sustainable Energy Ireland's ReHeat Programme, combined funding cannot exceed 40%. The SERVE Pproject grant offer will only be made after reviewing any offer of grant aid through the ReHeat Programme.

The Grant Levels for the SERVE Renewable Energy Grants are as follows:

Grant Measure	Grant Amount	Standard Required
Solar Flat Plates - SERVE only	€100 per m^2	European Solar Keymark certification
Solar Evacuated Tubes - SERVE only	€150 per m^2	European Solar Keymark certification
Solar Flat Plates/Tubes - SERVE & ReHeat	ReHeat + SERVE grant level - Up to a maximum of 40% of eligible costs	European Solar Keymark certification
Wood Stoves	€650	• Wood Burning Only • Must conform to one of the following standards - EN 13240 - Art. 15a - NS 3038/59 - EN 13229
Wood Heating Systems - SERVE only	€3,500	• Must conform to the following standards - EN 303-5
Wood Chip/Pellet (does not include wood gasification boilers) - SERVE & ReHeat	ReHeat + SERVE grant level - Up to a maximum of 40% of eligible costs	• Must conform to the following standards - EN 303-5
Wind/PV Demonstration Systems	These grants are managed by Greenloan on behalf of Surface Power. For further information log on to www.greenloan.ie or call 1850 336 336	

5. Application Process for Non Residential Building Owners

- An Expression of Interest is made by the building owner/applicant. This can be done online on www.servecommunity.ie or by calling North Tipperary County Council on 067 44671.
- A SERVE Pack is sent to eligible applicants. (Eligibility is defined by the age, location, heating spend and size of the building.) The SERVE Pack includes:
  - Information Guide
  - Technical Guide
  - Energy Data Waivers
  - Application Form
- The building owner/applicant submits the Application Form and the Energy Data Waivers to North Tipperary County Council. Evidence of building ownership status, legal status (if applicable), tax compliance and insurance etc. is also required.
- Tipperary Energy Agency completes an Energy Assessment on the building at a time and date agreed with the building owner/applicant.
- Following the assessment North Tipperary County Council sends out the Energy Assessment Report to the building owner/applicant along with a Request for Grant Aid Form.
- The building owner/applicant selects the measures required and returns the Form to North Tipperary County Council. An energy saving of 40% must be achieved for grant aid to be offered.
- North Tipperary County Council sends a Grant Offer to the Applicant. The Grant Offer consists of:
  - Letter of Offer
  - Terms and Conditions
  - Acceptance of Offer Form.
- The building owner/applicant returns the Acceptance of Offer with 3 quotes for the works proposed, as applicable..
- North Tipperary County Council signs the Acceptance of Offer and returns it to the building owner with a Declaration of Works Form and a Request for Payment Form. Works can now begin.
- At contractor payment stage the applicant must ensure the contractor completes the Declaration of Works Form.
- The building owner/applicant requests payment from North Tipperary County Council by sending in the:
  - Request for Payment Form,
  - Declaration of Works Form,
  - Original Invoice (s)
  - Original Receipt (s)/Evidence of Payment (s)
  - C2 details or Tax Clearance Certificate of the contractor(s)
- Tipperary Energy Agency and/or North Tipperary County Council carries out inspections on all/or a sample of the buildings.
- If all documentation and inspections are in order, North Tipperary County Council pays the building owner/applicant.
- All works must be carried out and request for grant payment made within the specified time indicated in the Letter of Offer.

6. Energy Assessment

The SERVE Grant Scheme will be providing grant support to eligible applicants for energy efficiency and renewable energy measures needed within their buildings. The measures required will be determined by Tipperary Energy Agency, as technical partner in the project, following an Energy Assessment of the building. There are two types of assessment available.

a. **Standard Energy Assessment.** Tipperary Energy Agency will carry out a short energy audit of the premises and recommend measures for grant aid. This would be appropriate for a small business or a business that already has an understanding of upgrading measures required. This audit will take approximately 2 hours on site and will cost €250 + VAT. This should be paid directly to Tipperary Energy Agency. 35% of this amount will

be refunded after upgrades have been completed to the required standard.

b. Tipperary Energy Agency can arrange an **In-Depth Energy Assessment** for the building. This type of assessment provides an in-depth analysis of the heating and lighting energy needs. It will assess the fabric of the building, heating system, heating controls, lighting and lighting controls. It will also assess the billing information for savings. The assessment will take approximately 3 hours on site, with significant analysis completed on all aspects of the site visit afterwards. It will cost €1,000 + VAT. This should be paid directly to Tipperary Energy Agency. 35% of this amount will be refunded after upgrades have been completed to the required standard.

Tipperary Energy Agency can discuss both options with the applicant in advance in order to decide on the best option.

7. Energy Data & Monitoring

7.1 Provision of Energy Bills

One of the requirements of the SERVE Project is to reduce the energy used and the CO_2 emissions in the region. This energy load for the region will be quantified by analysing energy data from before and after the works have been completed. The Tipperary Energy Agency requires at least two years of pre-upgrade energy data and two years of post-upgrade energy data. The building owner will be requested to sign a Pre and Post Authorisation Form for the Tipperary Energy Agency to request the data directly from the building owner's energy supplier.

Failure to supply bill information or to sign the waiver will result in ineligibility for the grant scheme.

7.2 Energy Monitoring

Under the SERVE Project Energy Grant Schemes, it is required to physically monitor the energy consumption in a number of the buildings upgraded. The buildings selected for monitoring will be at the discretion of the auditors. Monitoring of houses will require a certain amount of equipment installed in the house for a period of 2 years. The following (some or all) will be required for monitoring:

- Oil consumption via a flow meter into a boiler
- Interior temperature(s) via a wireless sensor located in the house
- Electricity consumption via a wireless sensor in the meter box
- Domestic hot water consumption
- Hot water production from installed solar panels
- Hot water production from installed wood stoves or boilers

Installations will be unobtrusive as possible. All sensors will be wireless and there will be no permanent fixings. In the case of the oil meter and hot water flow meter, the meter will have to be installed in the pipe.

8. Terms and Conditions

- The building, in respect of which the grant application is made, must be located in the SERVE region.
- The building must have been built pre 2006 and have necessary permissions and/or statutory approvals.
- All works must be carried out and request for grant payment made within the specified time indicated on the Letter of Offer.
- All relevant works carried out must comply with current planning requirements, particularly those requirements pertaining to protected structures and houses in Architectural Conservation areas.
- The applicant must have/obtain all necessary consents, permissions and statutory approvals, and have/obtain authority to install the measures in the building
- The applicant's agreement with North Tipperary County Council in the event of an Acceptance of Offer being signed will comprise of the Information Guide, the Letter of Offer and the

Terms and Conditions. The applicant shall comply with and agree to be bound by the provisions of these documents.

- Approval of the grant only becomes valid on receipt by the applicant of the signed copy of the Acceptance of Offer Form from North Tipperary County Council.
- The applicant must secure approval from North Tipperary County Council before assuming he/she will receive the grant. North Tipperary County Council reserves the right to reject/ approve applications to the SERVE Grant Scheme.
- The applicant must ensure that no purchase of materials or works commencement has occurred prior to the Acceptance of Offer being signed by the applicant and North Tipperary County Council.
- A grant is only payable if all works indicated in the Acceptance of Offer Form are completed as specified.
- The applicant must sign an Authorisation Form to allow Tipperary Energy Agency to obtain pre upgrade and post upgrade energy usage information.
- The applicant must allow Tipperary Energy Agency, or their authorised agents, install energy monitoring devices in an agreed place for the purpose of monitoring the energy consumption of the building if the building is selected for monitoring.
- The timing of the payment of the grant to approved applicants is subject to the funding allocated by the EU to the Scheme in a particular year. Where all conditions are met, payment will be made on a "first come, first served" basis. Where funding is exhausted in a particular year, payment to remaining applicants will be deferred until such a time as further funds is available. Deferred payments will receive priority, if and when those funds become available.
- The building owner/applicant must facilitate any reasonable request made by the local authority requiring the contractor to return to the house in order to make good any works deemed not to meet the standards of the SERVE Grant Scheme
- North Tipperary County Council and/or Tipperary Energy Agency accepts no liability or responsibility, whether for breach of contract, negligence or otherwise, in respect of any dispute, claim or cause of action arising out of, or in relation to, any product (or its suitability), any materials (or their suitability), equipment (or its suitability), work, system, service, specification, standard, installation or the qualification or performance of the contractor in respect of which grant approval or payment was given by North Tipperary County Council. No undertaking, guarantee, assurance or other warranty, express or implied, is given by North Tipperary County Council, or any of its agents or servants, in respect of the cost, quality, efficiency and/or benefit of any work, equipment, materials, product, service or installation provided under the SERVE Project Grant Scheme.
- In the event of any breach of the Terms and Conditions of the SERVE Project Grant Scheme or the Letter of Offer or the Acceptance of Offer by the applicant and where the applicant has received payment pursuant to the Scheme, North Tipperary County Council shall, amongst its remedies against the applicant, be entitled to demand the complete repayment of the grant payment and the applicant agrees to comply with any such demand within one month of the date of the letter from North Tipperary County Council containing such demand.
- North Tipperary County Council may at any time from the date of acceptance of offer of grant revoke, cancel, recover or abate the grant should there be a material change to proposal for works grant-aided, or should applicant's operation cease for whatever reason.
- The applicant shall follow the North Tipperary County Council complaints procedure in relation to any disputes between the applicant and North Tipperary County Council concerning any matter in connection with the Scheme.
- All data received from applicants by North Tipperary County Council and Tipperary Energy Agency will be subject to Data Protection and will only be used for the purposes of the SERVE Project.
- There will be a need for dissemination activities including case studies, site visits, media and other materials etc. Individual homeowners will be asked for permission to use their home for these purposes.

SERVE
Sustainable Energy for the Rural Village Environment

Application Form
Non Residential Buildings

1. Applicant Details

Name of Applicant _____

Address_____

_____

_____

Contact Person _____

Contact's Address_____

_____

Landline No. _____ Mobile No. _____

E-mail Address_____

Type of body making the application: (please tick one)

Voluntary Organisation with Constitution ☐ Private Sector Business ☐

Community Based Group/Co-Op/Company ☐ Public Body ☐

Other ☐ Please specify_____

Legal Status_____

Please find attached:

A Copy of Tax Clearance Certificate/C2 Details Yes ☐ No ☐

and/or

Evidence of Charitable Status Yes ☐ No ☐

Is applicant registered for VAT? Yes ☐ No ☐

If yes, please state VAT No. _____

For Registered Companies Only:

Type of Company_____

Company Registration No. _____

List the names of the Directors

Name:_____ Name:_____

Name:_____ Name:_____

Name:_____ Name:_____

Name:_____ Name:_____

For Community & Voluntary Groups Only:

Name of Chairperson_____

Name of Secretary_____

When was your group established_____

Number of members in your group_____

Describe the main objectives/activities of your group_____

_____

_____

2. Details of Property to be Upgraded

Address_____
(if different from the applicant address)

_____

_____

_____

In what year was the building built? _____(only pre 2006 buildings are eligible)

Is the building a listed building? Yes ☐ No ☐

What in the size of the building (sq m/sq foot)?_____

What is the average heating spend per annum?_____

Does the existing building have planning permission? Yes ☐ No ☐

Is the applicant the owner of the property to be upgraded? Yes ☐ No ☐

If no, what is the current ownership status?_____

_____

Evidence of this Ownership Status attached (e.g. evidence of Title/Lease/Interest in building):	Yes ☐	No ☐
Evidence of Insurance attached	Yes ☐	No ☐

3. Application Declaration

- I confirm that the building is in the SERVE region.
- I understand that if the building is eligible, an energy assessment will have to be undertaken and that the grant offer is based on this energy assessment.
- I understand that an energy saving of 40% must be achieved for grant aid to be offered.
- I understand that the measures undertaken need to be completed to the required standard to be eligible for grant payment.
- If my building is selected, I agree to participate in a monitoring programme.
- I understand that to avail of the grant-aid I need to provide pre and post upgrade energy data, and, if the building is selected for monitoring, to allow monitoring equipment to be installed
- I understand that grant-aid will not be paid for purchases made or works commenced before the signed Acceptance of Offer has been returned to me by North Tipperary County Council.
- I understand that if I accept the grant offer, all works must be carried out and request for payment made by a specified date in 2009 determined by North Tipperary County Council.

_____ _____

Signature **Date**

4. Please return completed application form to:

SERVE Grant Scheme
Community & Enterprise Department
North Tipperary County Council
Civic Offices
Limerick Road
Nenagh
Co Tipperary

5. For further information:

Telephone: 067 44671
E-mail: sheila.healy@northtippcoco.ie
Web: www.servecommunity.ie

Comhairle Contae Thiobraid Árann Thuaidh
North Tipperary County Council

The SERVE Project is funded by the European Commission under its Concerto Programme

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TIPPERARY energy AGENCY

Appendix 6: Non Residential Request for Grant Aid and Grant Offer

Non Residential Energy Grant Scheme
SERVE Project

Request for Grant Aid

Please tick the measures for which you wish to apply:

Energy Efficiency Grant Measures:

	Measure	Expected % Reduction in Energy	Standard Required	Grant Level	Please tick ✓
1	Attic Insulation	20%	• U-value of 0.13w/m^2/k or as near as practicable	30% of Eligible Costs	
2	Cavity Fill Wall Insulation	10%	• U-value of 0.27w/m^2/k or as near as practicable	30% of Eligible Costs	
3	Heating Controls	36%	• Controls to allow for independent programming of water and space heating through time and temperature	30% of Eligible Costs	
4	Condensing Boiler	10%	• Oil Boiler must be ≥94% Efficient • Gas Boiler must be ≥92% Efficient	30% of Eligible Costs	
5	LEDs to replace spotlights	1.5%	• 100% Spotlights replaced with LEDs	30% of Eligible Costs	
6	CFLs and T8s, motion sensors	1.5%	• 100% Tungsten Halogens replace with CFLs • Motion Sensors in Changing Rooms	30% of Eligible Costs	

Please note: Maximum grant level is €17/m^2 floor area. This means that the maximum grant level for your total selected energy efficiency measures is 30% of eligible costs up to a maximum of €xxxx

Renewable Energy Grant Measures:

	Measure	Expected % Reduction in Energy	Standard Required	Grant Level	Please tick ✓
7a **or** 7b **or** 7c	Solar Flat Plates – SERVE Only	47%	• Capable of Supplying 40% of Annual Hot Water	€100 per m^2 for Solar Flat Plates	
	Solar Evacuated Tubes– SERVE Only	47%	• Capable of Supplying 40% of Annual Hot Water	€150 per m^2 for Evacuated Tubes	
	Solar Panel – SERVE & ReHeat	47%	• Capable of Supplying 40% of Annual Hot Water • Compliant with SEI ReHeat requirements	ReHeat + SERVE grant level up to a maximum of 40% of eligible costs	

You are reminded that:

- The building must reduce its energy consumption by 40% to avail of Grant Aid. Therefore you must apply for a measure or a combination of measures that reaches or exceeds this requirement.
- Where VAT is recoverable, it is not an eligible cost.

Appendix 3: SERVE D3.3Report on planned installations to be installed in Phase 2 of RE Retrofitting

Project Acronym: SERVE
REF EC: (Project Number) TREN07/FP6EN/S.07.71106/038382
REF (project coordinator org.):
DOCUMENT:
REF.:

Project Coordinator: Seamus Hoyne
Project coordination org.: Tipperary Rural and Business Development Institute
Date: 8th December 2009
Revision: Final

Deliverable Report
Deliverable No.: 3.3
Work Package No: 3

CONCERTO INITIATIVE
SERVE

Sustainable Energy for the Rural Village Environment

Report Title:

Report on plans for in Phase 3 of RES Retrofitting

Date: 8th December 2009

Author: North Tipperary County Council

Version: 2.0

CONCERTO is co-funded by the European Commission

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1 Plans for Phase 3

This report outlines the plans and options which the WP3 teams are assessing with regard to the implementation of Phase 3 of the RES retrofitting actions. This review is being carried out in the context of

- Review of progress on targets and potential to achieve these in the relevant timeframe
- Analysis of works completed in Phase 1 and 2
- Engagement with National Programmes such as the SEI HES Scheme and other emerging schemes

The WP team and the Technical Coordinator will finalise the most appropriate option following consultation with the EU Commission.

2 Current Status and Targets

Work Package 3	Target KW	KW to date	Committed KW	Possible KW	Required KW
Wood Stoves	2600	37.7	36.1	13.5	2512.7
Wood Boiler	900	0	0	0	900
	Target m^2	**m^2 to date**	**Committed m^2**	**Possible m^2**	**Required m^2**
Solar	400	32.5	16	12	339.5
	Target kW	**KW to date**	**Committed KW**	**Possible KW**	**Required KW**
Wind/PV	10				

Table 2-1: Current Status WP3

2.1 Proposed Changes

The following issues are being considered

1. Increasing the period for implement from Month 36 to Month 48 to make up for the delays in implementing the WP
2. Removing the energy efficiency requirement for people to apply for RES Retrofitting Grants to maximise the market available for the installations
3. Re-allocation of capacity from wood stoves and individual boilers to a number of larger scale projects biomass heating projects
4. Micro Generation targets being increased and change contract to allow more suppliers provide products
5. Complete scoping study of potential for inclusion of Anaerobic Digestion project within the SERVE project

2.2 Increasing period for implementation from Month 36 to Month 48

This will allow the SERVE team to make up for the delays experienced at the start of WP3 and also allow new projects seeking to engage in the project to be completed. All RES projects which are implemented will have monitoring put in place upon implementation to ensure the maximum quantity of data is gathered for analysis in WP5.

2.3 Removing energy efficiency requirement

The requirement for buildings, in particular dwellings, to have implemented energy efficiency measures prior to being considered for support for RES actions was proposed at the start of the project and deemed appropriate at the time. However, the delays in implementing the WP1 actions on energy efficiency have reduced the timescale for implementing WP3 actions and therefore the potential number of applicants for WP 3 grants is reduced.

Removing the energy efficiency requirement prior to implementing RES and allowing all houses/buildings in the SERVE region to apply for a SERVE RES grant will increase the market for the supports considerably and allow for a more dedicated promotional campaign on renewables to be rolled out.

2.4 Reduction of target for Individual Boilers and inclusion of Large Scale Biomass Projects

The WP team have been engaging with a number of larger scale projects in the field of biomass heating. These two projects, with combined capacity of approximately 1,100kW installed are currently under-going detailed feasibility analysis and implementation would be completed by Month 48. These two projects include

- Large scale biomass heating system for hotel and swimming pool: An initial feasibility study has been completed and a meeting to progress the potential installation is to be held on the 9th of December. Initial estimated capacity is 500kW
- Large scale biomass heating system for agricultural college: An initial feasibility study is being completed (deadline 8th December). Initial estimated capacity is 500-750kW

These significant projects would allow the SERVE project to achieve significant installations of RES in the region in a shorter timeframe while also allowing it to provide supports to the residential sector. To maintain budgets and allow engagement of the above projects the SERVE project is proposing to reduce the targeted installations for individual stoves and biomass boilers in residential and non-residential systems.

A large anaerobic digestion (AD) plant is due to be constructed in the SERVE region. This plant would process organic waste and agricultural slurries. Initial estimates are for a 750kWe CHP plant to be on site. Initial discussions have been held with the project developers. Inclusion of this project would have considerable impact on project budgets and require a revision of targets across all aspects of WP3. SERVE is proposing that it would engage with the AD project developers from January to June 2010 to complete a detailed scoping study of the potential for inclusion of the development within the SERVE project. This will allow the SERVE project to mitigate against any risks associated with the plant being successfully completed e.g. licenses, permissions, finance being secured etc. This scoping study would be completed by the TEA. AD was originally excluded from the scope of work under SERVE given the restrictive regulatory and support conditions in Ireland. These have now changed significantly and the potential for AD developed is more positive.

2.5 Micro Generation

The implementation of micro-generation projects in the region has been extremely slow. This has been due to the significant changes which have happened in Ireland in relation to policy supports and measures for micro-generation. In 2008 there was limited interest in implementing measures as discussions were on-going with regard to new Irish policy and in 2009 the market has been driven by a specific National pilot scheme.

The number of suppliers of technologies in the Irish market has changed significantly since 2007 and the regulatory framework is now more supportive for the installation of micro-generation systems. The SERVE project is currently somewhat restricted due to the fact that the contract is designed to only have 1 supplier (Surface Power) providing installations.

The WP partners are considering increasing the potential targets in the field of micro-generation. To do this with the current contractual arrangement would place Surface Power in a position where it has considerable market advantage over other suppliers and also restrict competition for potential applicants.

SERVE is considering the following adjustments to contract

- Include additional Micro Generation Supports under WP3, via NTCC and TEA, for other potential projects (estimated additional capacity 10kW).

2.6 Revised Targets

Item	Unit	Current Target	Change (%)	Revised Target
Wood Stoves Ind	kW	2,600.00	-50%	1,300.00
Wood Boilers Ind	kW	900.00	-60%	360.00
Solar Thermal Ind	m^2	400.00	0%	400.00
Wind/PV	kW	10.00	100%	20.00
Large Biomass Heating	kW			1,100.00

Table 2-2: Revised targets WP3

The AD Plant will require further discussion with the EU Commission with regard to its inclusion as it is a significant change to the contract. All of the other changes are seen from the perspective of the SERVE partners as being within the general scope of the project. If the AD project were to be included it would require further review of the project targets and budgets to allow funding to be provided to it.

2.7 Justification of Changes

- Implementation of WP 3 was delayed due to it being dependent on the successful implementation of WP1 on eco-buildings. As WP1 was delayed significantly this also delayed WP3 and hence it was not put in place until June 2009 (18 months delay).
- WP3 could not be implemented until WP1 was in place as the current outline of SERVE required energy efficiency measures to be implemented prior to support being provided for RES retrofitting.
- SERVE had to engage with the Sustainable Energy Ireland with regard to relevant National Schemes to avoid duplication of funding.
- A number of large scale projects have been identified or have approached the SERVE project seeking to become involved. These projects present significant opportunities to implement major RES installations within the region.
- The area of micro-generation has changed significantly in the past 24 months with new regulatory and policy frameworks being put in place. This has caused some market confusion and resulted in delays in implementation. Also, new suppliers have emerged in the market and have expressed an interest in engaging in the project.

2.8 Engagement with National Schemes

Phase 3 is due to be launched in January 2010 (Month 27 of the SERVE project). Phase 2 will be finalised by Month 26 (December 2009) with a focus on inspections, grant payments and the closing of Phase 2. During months 25 and 26 the plans for Phase 3 will be drafted, discussed with the EU commission and finalised.

The timing of the launch of Phase 3, which includes the RES and energy efficiency grants, will be determined after the national budget in month 26.

3 Conclusion

The following changes to WP3 are being proposed and will be reviewed and agreed with the EU Commission

- Increase period of demonstration works from Month 36 to Month 48 for WP3.
- Reduce target for individual stoves from 2,600 to 1,300kW
- Reduce target for individual boilers from 900 to 360kW
- Include new target for non-residential biomass heating systems of 1100kW
- Increase micro-generation from 10kW to 20kW. 50% for Surface Power and 50% NTCC/TEA

- Include specific target for micro-generation at eco-village of 50kW
- Scoping study to evaluate inclusion of 750kWe AD plant in project

All of the above changes will have no change on the overall budget for the project nor on the energy targets in terms of energy savings and RES production. Re-allocation of resources to emerging aspects within the region is deemed by the SERVE partners to be the most appropriate response to supporting the development of sustainable energy in the region and meeting the SERVE targets. The current economic climate presents challenges for all aspects of the SERVE project but the partners remain committed to implementing the project and applying relevant resources to achieve the targets.

Appendix 4: SERVE D3.4Report on Wood Stoves Specifications

Project Acronym: SERVE
REF EC: (Project Number) TREN07/FP6EN/S.07.71106/038382
REF (project coordinator org.):

Project Coordinator: Seamus Hoyne
Project coordination org.: Tipperary Rural and Business Development Institute
Date: 8th December 2009
Revision: Draft 1.0

Deliverable Report
Deliverable No.: 3.2
Work Package No: 3

CONCERTO INITIATIVE
SERVE

Sustainable Energy for the Rural Village Environment

Report Title:

Wood Burning Stoves Specification

Date: 8th December 2009

Author: Paul Kenny, Tipperary Energy Agency

Version: 3.0

CONCERTO is co-funded by the European Commission

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1 Introduction

One of the aims of the SERVE project is to stimulate a switch from fossil fuels to renewable fuels. To this end the SERVE project is supporting high quality wood burning stoves to replace secondary heating systems in the SERVE region. The aim is to install 2600kW of wood burning stoves or approximately 400 stoves. When establishing the criteria for supporting these stoves it became apparent that there was no clear definition of wood burning stove in use in Ireland. After much research, a definition and functionality has been established for the purposes of stimulating the fuel switch from fossil fuels such as coal and peat to renewable sources, such as wood and wood products.

2 Secondary systems in Ireland

Secondary systems in Ireland are defined, as per the EPBD, as systems supplying heat to a single room, or room heater. While there are various ways to determine the exact definition of a secondary heating system, in this analysis it will be assumed to be a single room heater supplying 10% of annual space heating requirements.

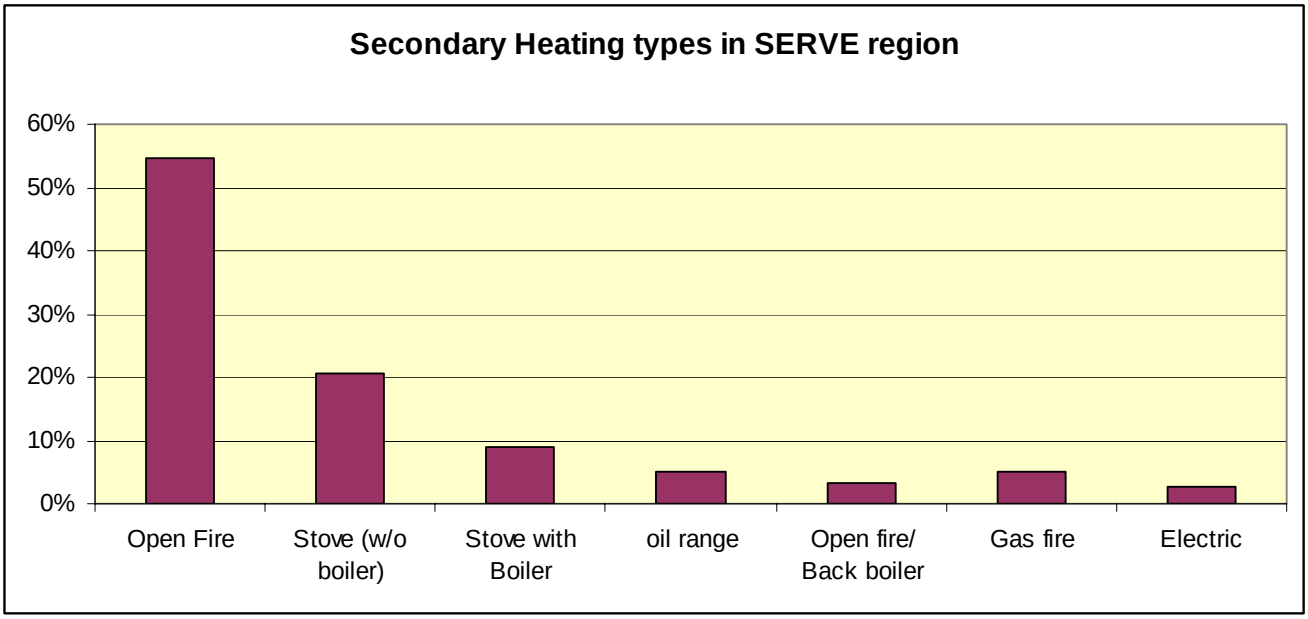

Figure 2-1: Analysis from SERVE Phase 1 DEAP's: heating system based on recorded default efficiencies.

- Open fires: open room heater with open chimney.
- Stove (with or without boiler) is an enclosed room heater fired by oil or solid fuel.
- Oil Range is a combined cooking and heating system, vernacular to Irish country dwellings.
- Gas fire: Various types of bottled LPG Gas fuelled room heaters in place of open fires
- Electric: Electric fuel effect fires replacing open fires.

From the above data, and from surveyed data, it can be seen that the vast majority of secondary space heating systems derive from two original installations, the open fire and the central/ water heating range.

2.1 Open fire & replacements, generally in sitting/living rooms.

Open fires account for 55% of all defined secondary heating systems. Some of these have been upgraded to high efficiency stoves; others have been replaced with convieniant / decorative gas or electric room heaters. The SERVE project would aim to replace the open fires with high efficiency wood burning stoves.

2.2 Water and Central Heating Ranges.

There were a large number of traditional Irish houses heated with a solid fuel range. A range or often called a range cooker is an appliance that has a combustion chamber, two ovens and a water heating heat exchanger that can be used for domestic hot water and space heating. Traditionally these would have been used for 14 hours per day and in some cases never switched off.

In recent years some of these systems have been converted to kerosene with installation of an oil burning paper wick type system. In one house, when a homeowner was asked, at what point [in the day] it is lit, the answer given was “September”. The range was running for 8 months of the year on a continuous basis. The default thermal efficiency of this appliance is 60% and is represented in the third bar of the graph above.

SERVE aims to eliminate these systems from providing space heating altogether, by replacing with a radiator supplied by the main heating system or by installation of a high efficiency wood burning stove.

3 Stove Quality

Based on surveys of the stove suppliers in the SERVE region, and surrounding regions, it became clear that there were two main classes of stoves supplied. While the table below is a generalisation, there are good cheap stoves, and poor expensive stoves, it is a general observation of the marketplace.

	Higher Quality	**Lower Quality**
Certification	EN 13240/ 13229	None present
Suppliers	Specialist stove and fireplace merchants	General hardware
Origin	European and US	Far East
Cost	€700 - €2500	€300- €1200
Construction	Cast Iron, heavy plate steel	Light, welded steel.
Fuel	Wood or Multifuel	Non-descript or multifuel
Branding	Long established brands	Shop own brand, or new brands.

Table 3-1: General overview of wood stove types

The SERVE project specifically aims to promote high quality wood burning stoves, and as such, only stoves that meet the rigorous testing standards applied under the EN13240/13229 where applicable. There is also a provision to accept stoves tested under the Norwegian and Austrian testing standards also, but as yet, none have been requested.

4 Definition of a wood stove:

The definition of a wood burning stove is not currently recognised nationally in any standard, nor is it specifically defined in any European standard. In order to meet the criteria of wood burning stove for the SERVE project, it became necessary to define this on a local scale, working with local suppliers and installers. Under this research it became apparent that there are three “types” or “classes” of stove in the Irish market. Note that these are only stoves that have been certified under the EN13240/13229 standards.

There are four distinct differences between a stove designed and optimised for wood versus designed for coal. For other fossil fuels, such as peat, there are similarities to both, but usually more towards the coal fired stoves.

4.1 Differences between wood and coal fired stoves

4.1.1 Grate

The grate of a wood burning stove is designed to be flat to allow the timber rest in its own ashes while burning. As timber is a low ash fuel, this does not restrict the air reaching the fuel. A coal or turf stove is designed to have a raised grate to allow air circulate below and through the fuel from below, while at the same time, allowing the ash to fall free from the fuel combustion surfaces. Often these are more vertical in nature or with sloping sides. They generally will also have the facility to riddle (encourage ash to fall) the embers. Both methods use a small amount of air injected to keep glass clean.

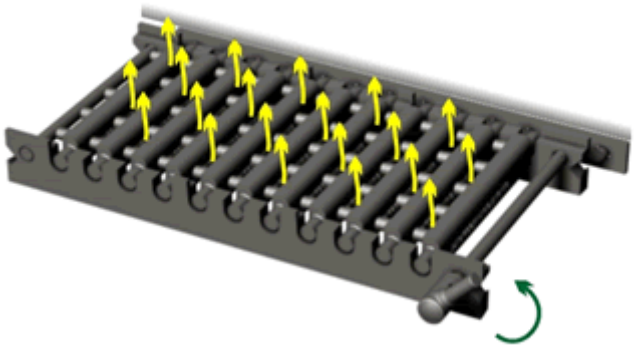

Figure 4-1: HWAM wood burning grate (will be fully close-able) **Charnwood Coal/ turf riddling grate**

4.1.2 Air supply

The air supply to optimise burning wood should mix with the wood gasses, while hot and ignite there. In wood gasification boilers, where the primary air is insufficient for complete combustion and the secondary air is added this in a separate chamber to get the highest efficiency out of the system. In a log stove this is generally done by way of having no or very low amount of air supplied from below, and the remainder supplied from above, and generally preheated prior to mixing with the wood gases.

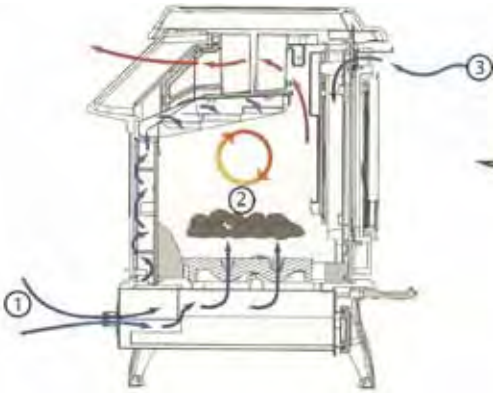

Figure 4-2: Wood Burning stove, Preheated secondary air (3) enters from top of combustion chamber. Primary Air (2) is used predominantly to light, or in case of higher moisture content timber.

Figure 4-3: Coal burning stove, Primary air enters from bottom (1), secondary air (3) is preheated against the combustion chamber and again enters from below.

4.1.3 Combustion chamber materials

Stoves built for burning timber will need to be able to regularly survive temperatures in the 300-400 °C range. They will be able to withstand higher temperatures, but generally not for long life. Coal burning stoves will see temperatures in the high hundreds of degree's (700°C - 900°C) and will often almost glow red hot, although this is not recommended. To this end, stoves built for burning timber will be of thinner material construction in order to radiate out the heat, where coal burning stoves will be of heavier grade materials.

4.1.4 Combustion Chamber shape

Timber combustion favours the open flat chamber to support the lower energy density & intensity fuel. The combustion chamber for coal stoves is generally vertical in nature, such that the coal burns at a slow rate for a longer unloading time. It is also significantly higher density and harder to burn so that the fuel at the lower end, adjacent to the air supply burns first and heats the above coal prior to ignition.

Figure 4-4: Traditional Wood burning Stove

Figure 4-5: Traditional Coal burning stove

4.2 Types of Stove

4.2.1 Wood burning only

- Tested on ***only*** wood fuel for the purposes of the EN13240/ EN13229.
- Manufacturer's documentation details that the appliance is suitable for wood or wood derived fuels only.
- Generally from Scandinavian, Austrian, forested parts of the US and Canada.
- Primary air control generally recommended to be used for appliance lighting
- Secondary air usually injected from above.
- Usually without a grate, such that the timber can burn in its own ashes.
- These stoves have a low Irish market penetration, due to the reluctance of the Irish consumer to purchase a non peat burning appliance.

4.2.2 Wood and multifuel Stove

These stoves, very similar to above, are sold as wood burning stoves in many European countries. They are almost identical in every way. In order to ensure penetration into the Irish and British consumer with their traditional peat and coal fuels respectively, the manufacturers have been adapting or modifying their stoves to burn other fuels. Some have marketing information about their stoves as being multifuel, but closer examination of their technical specifications, they recommend only burning wood, or occasionally other fuels, while never allowing coal to be burnt.

- Tested on wood fuel & multifuel briquettes for the purposes of the EN13240/ EN13229.
- Manufacturer's documentation details that the appliance is suitable for wood or non coal fuels.
- Generally from Scandinavian, Austrian, forested parts of the US and Canada.
- Primary air control generally recommended to be used for appliance lighting, and when burning non wood fuels.
- Secondary air usually injected from above.
- Generally these are supplied with an "aftermarket" grate or riddling system to allow for increased airflow around fuels.
- They may be supplied with a reducer in the combustion chamber to protect the stove from the more intense fuels.
- These stoves would make up a very large portion of the stoves on the Irish market.

A further methodology to ensure wood burning only was examined as part of this research. There is the possibility of the installer physically modifying the stove to ensure that the aftermarket grate would not be possible to install, or by decreasing or eliminating the primary air supply such that burning coal or peat would be difficult. The air- supply method however, will decrease the ignition stage performance and will therefore affect perception in the marketplace and is therefore not recommended. The grate prevention modification is less intrusive than the air supply method, and could be an option, but was deemed to be not feasible on the scale of the SERVE project, and would be only applicable to some models. If the manufacturers, faced with an unfavourable market condition of not being able to supply to the Irish market, or a perceived negative attribute/ restriction of some kind, were to try to solve this problem, it would be a relatively simple process.

4.2.3 Multifuel Stoves

- Tested on solid multifuel for the purposes of certification
- Generally these stoves are designed with both primary and secondary air to be supplied from below.
- From traditional coal burning areas of the US and UK.
- Advertised as a coal and peat burning multifuel appliance
- Brands such as Waterford, Mulberry, Wenlock, Stratford etc.

4.3 SERVE criteria

In order to ensure, insofar as possible, that only wood burning stoves would be supplied and utilised, while at the same time ensuring that the large number of traditionally wood burning stoves available on the Irish market would allow homeowners plenty of choice, the following criteria were put in place:

1. Stoves with an EN test cert, tested on wood only automatically qualify for the SERVE grant scheme.
2. Stoves tested with both wood and multifuel will need to be sold in two variants, one wood, and one multifuel. The installer will have to provide detail of how this variant distinguishes itself from the multifuel variant prior to getting onto the register of stoves available (e.g. sold without multifuel grate). In addition to this, the installer will have to sign the declaration of works to detail that the stove is installed as the wood burning variant.
3. Stoves that are only multifuel, or have no variant between wood and multifuel will not be eligible for the SERVE support.

All stoves must be supplied with a testing certificate or declaration of conformity stating the following minimum pieces of information:

1. Testing organisation
2. Certified thermal efficiency
3. Certified output
4. Fuel tested.

5 Sources of collated information

HETAS, the official UK body to approve solid fuel domestic heating appliances, fuels and services have published an extensive guide. Part 1 of this guide provides a collation of all of the UK registered stoves on the market, and by proxy, a large percentage of the stoves on the Irish market. Appendix 1 provides an extract from the HETAS Official Guide on Solid Fuel Appliances. The full document is available at http://www.hetas.co.uk/public/hetas_guide.html.

Manufacturer's websites often have the published testing certificates. A sample Certificate in provided in Appendix 2.

Direct contact with the manufacturers and testing organisations has yielded test certificates also.

6 Conclusion

The stoves installed under the SERVE project will be all designed as wood burning stoves. A large percentage of these will burn wood only. Some homeowners will burn other fuels, but will do so knowing that they are reducing their appliances lifespan and potentially invalidating their guarantee, therefore they will know burning other fuels is wrong, and this will aid discouraging them from doing this.

On a national basis, for the purposes of the building energy rating certification of CO_2 emissions, it should be possible to collate the HETAS data to detail which appliances are wood burning only (4.2.1).

The collation of appliance data pertaining to wood and multifuel stoves could be completed similar the SERVE methodology, with the manufacturer declaring what makes the variant wood burning, and the BER assessor, armed with this knowledge, making a judgement based on the appliance and the fuel available.

Appendix 1: Extract from HETAS Guide

PART 1

APPLIANCES BURNING SOLID MINERAL FUELS AND WOOD

A. INTRODUCTION

The wide range of appliances listed in this section are designed to burn either solid mineral and/or wood based fuels.

Principally, the solid mineral based fuels consist of manufactured smokeless fuels which have been “authorised” for use in smoke control areas and which have been subjected to Approval testing themselves. The tests applied show these fuels to be suitable for either open or closed appliances or in some cases for both types of appliance. In selecting a suitable fuel for your appliance reference should be made to the headings of the appliance sections and the notes which accompany the individual appliance listings and Part 2 of this `Guide'. Additionally, naturally occurring smokeless fuels such as anthracite may also be burned in smoke control areas. These fuels are listed against those appliances for which they are suitable.

Where the various grades of House Coal, wood logs and other wood products are listed against appliances, in general, they must not be burned in smoke control areas. However, a number of appliances are especially designed to burn specific grades of bituminous coal, wood logs and other wood products with a high degree of smoke reduction sufficient to permit their use in smoke control areas. **These “exempted” appliances are designated with a † after their name in this Guide.** An up to date list of authorised fuels and exempted appliances, for use in smoke control areas, is available from the Department for Environment, Food and Rural Affairs, Air Quality Policy Division, Zone 4/D13, Ashdown House, 123 Victoria Street, London SW1 E 6DE and are given on their website, “www.uksmokecontrolareas.co.uk”..

Wood logs and wood based products are of major importance following the implementing of the Energy Performance of Building Directive (see below). They should be from renewable sources to claim low CO_2 emission values. Where the appliance is a DEFRA “exempted” appliance designed to burn wood logs then specific conditions as to the quality of the wood fuel are imposed by the Statutory Instrument. Usually this requires the use of untreated dry wood i.e. without halogenated organic compounds or heavy metals as a result of treatment with wood-preservatives or coatings. Sometimes the SI refers to air-dried wood logs or untreated dry wood. Where appliances are designed to burn wood chips or wood pellets the fuel size, quality and type specified by the manufacturer should always be adhered to.

Petroleum coke is not recommended by HETAS for use on solid fuel burning appliances because its use can result in serious damage to grates and other appliance components in the firebed area. However, a number of products which contain petroleum coke or are blends of petroleum coke with other fuels have been tested and approved (see Introductory Note 4.6).

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With the adoption by the UK of the Energy Performance of Buildings Directive and its introduction via Building Regulations L, we list the nominal output and efficiency at nominal output of all the appliances listed. These have been obtained from Type Test Reports from Notified Laboratories in Europe against harmonized European Standards. UK Building Regulations require that if a solid fuel burning appliance is to be installed it must have an efficiency which meets minimum levels. These levels are the same as those required for HETAS Approval and are given in Section 6 of the Introductory Notes at the front of this Guide. Further, if burning the same fuel, any replacement appliance must have an efficiency no more than 2 efficiency points less than the appliance it replaces. If the replacement appliance burns a different fuel, then a calculation based on relative carbon emissions is applied. A list of the efficiencies of earlier HETAS Approved Appliances based on BS testing is given on the HETAS web site, “www.hetas.co.uk”.

For new installations an SAP assessment must be carried out. These efficiency and output figures may then be used for SAP calculations remembering that they are for nominal output conditions. Currently, when the appliance is for supplementary heating the nominal output efficiency is used. Where the appliance supplies full heating for the house and no slow combustion Test figure is available a default figure is applied for slow combustion being 95% of that at nominal output. This usually results in a “seasonal” efficiency of 97.5% of the measured efficiency at nominal output.

The appliances listed provide a wide choice of styles and outputs ranging from open fires with and without water heating boilers, through roomheaters and stoves with and without boilers and cookers which may also include small or large output boilers to independent central heating boilers. Care should be taken in the selection of the appliance best suited to the specific needs of your house and your life style. A number of organisations are ready and able to give help should you require it and their names and addresses are given elsewhere in this publication.

E. ROOMHEATERS/STOVES (continued)

Appliances (See Notes above)	**Manufacturers**	**Rated Output kW and Gross Efficiency at Nominal Output** (see introductory Notes 6.2, 6.3 and 6.4)		**Manufacturer's Remarks** (See Notes above)
		Direct Room Heating	**% Gross Eff.**	
Riva Plus Range:	Stovax Ltd			Freestanding roomheaters. Manual primary air control. Burns Manufactured and Natural Smokeless fuels as approved for closed appliances in Part 2 of this Guide and wood logs only.
Model: Small		When burning wood 5.0	77.1	
		When burning smokeless fuels 5.0	79.1	Refuel periods for the Riva Plus Small are 0.75 h for wood and 1.0 h for smokeless fuels to give the rated outputs shown.
Model: Large		When burning wood 11.0	71.0	Refuel periods for the Riva Plus Large are 0.75 h for wood and 1.5 h for smokeless fuels to give the rated outputs shown.
		When burning smokeless fuels 11.0	68.3	These appliances are classed as “intermittent” when burning both wood and smokeless fuels.
Stockton 3	Stovax Ltd	When burning wood 3.8	70.1	Dry freestanding multi-fuel roomheater. Manual primary air control. Burns Manufactured and Natural Smokeless fuels as approved for closed appliances in Part 2 of this Guide and wood logs only. Refuel periods are 0.75 h for wood and 1.0 h for smokeless fuels to give the rated outputs shown. This appliance is classed as “intermittent” when burning both wood and smokeless fuels.
Model 7118 (MF) †		When burning smokeless fuels 3.8	84.0	
Stockton 4	Stovax Ltd	When burning wood 3.8	70.1	Dry freestanding roomheaters. Manual primary air control. Available as wood only version which can burn wood logs only or as multi-fuel version which can burn Manufactured and Natural Smokeless fuels as approved for closed appliances in Part 2 of this Guide and wood logs only. Refuel periods are 0.75 h for wood and 1.0 h for smokeless fuels to give the rated outputs shown. These appliances are classed as “intermittent” when burning both wood and smokeless fuels.
Model 7101 (wood only) †				
Model 7102 (MF) †		When burning smokeless fuels 3.8	84.0	

† denotes it is a DEFRA Exempted Appliance and can be used in Smoke Control Areas

Appendix 2: Sample Stove Certificate

CE

CHARNWOOD - A.J.Wells & Sons Ltd.

Bishops Way, Newport, Isle of Wight PO30 5WS, United Kingdom

A Division of A.J.Wells & Sons Limited Registered in England No. 0000751

06

EN13240:2001

Country 4 Roomheater fired by solid fuel

EC Certificate of Conformity no.	:	EY44-CPD-2006
Combustible materials used in fireplace construction	:	No
Emission of CO in combustion products	:	0.89%
Flue gas temperature	:	201°C
Space heating thermal output	:	4.7kW
Energy efficiency	:	81.2%
Fuel types	:	Wood Logs

CE

CHARNWOOD - A.J.Wells & Sons Ltd.

Bishops Way, Newport, Isle of Wight PO30 5WS, United Kingdom

A Division of A.J.Wells & Sons Limited Registered in England No. 03809371

08

EN13240:2001
Cove 1,Cove 2 et Cove 3
Poêles à combustible solide

	Cove1	Cove 2	Cove 3
N° de certificat de conformité CE :	SY44-CPD-2006	PY44-CPD-2006	RY44-CPD-2006
Distance minimale des matériaux combustibles			
Côté	550mm	450mm	500mm
Arrière	550mm	600mm	500mm
Emissions de CO dans les produits de combustion :	0,47%	0,33%	0,23%
Température des fumées :	275°C	338°C	310°C
Puissance thermique de chauffage :	4,1kW	8,0kW	12,0kW
Rendement Énergétique:	76,5%	74,7%	78,4%
Type de combustible	**Bûches de bois**		

CE

CHARNWOOD - A.J.Wells & Sons Ltd.

Bishops Way, Newport, Isle of Wight PO30 5WS, United Kingdom

A Division of A.J.Wells & Sons Limited Registered in England No. 03809371

08

EN13240:2001

Country 6, 8 and 12 Roomheaters fired by solid fuel

		Country 6	Country 8	Country 12
EC Certificate of Conformity no.	:	DY44-CPD-2006	FY44-CPD-2006	GY44-CPD-20
Combustible Materials used in fireplace construction	:	No	No	No
Emission of CO in combustion products	:	0.56%	0.45%	0.45%
Flue gas temperature	:	269°C	319°C	414°C
Space heating thermal output	:	7.2kW	8.2kW	12.0kW
Energy efficiency	:	80.5%	79.8%	74.1%
Fuel types	:	Wood Logs		

CE

CHARNWOOD - A.J.Wells & Sons Ltd.

Bishops Way, Newport, Isle of Wight PO30 5WS, Royaume-Uni

Division de A.J. Wells & Sons Limited immatriculé au Royaume-Uni No. 03809371

08

EN13240:2001

Island I, II et III Poêles à combustible solide

		Island I	**Island II**	**Island III**
N° de certificat de conformité CE	:	AY50-CPD-2006	BY50-CPD-2006	CY50-CPD-2006
Matériaux utilisés pour la cheminée :		Non	Non	Non
Emissions de CO dans les produits de combustion	:	0,63%	0,50%	0,30%
Température des fumées	:	247°C	290°C	365°C
Puissance thermique de chauffage	:	6,1kW	8,0kW	12,3kW
Rendement Énergétique	:	78.1%	78,0%	76,4%
Type de combustible			**Bûches de bois:**	

Appendix 5: SERVE D3.5Report on RES Retrofitting Actions Year 3

Project Acronym: SERVE REF EC: (Project Number) TREN07/FP6EN/S.07.71106/038382 REF (project coordinator org.): DOCUMENT: REF.:	Project Coordinator: Seamus Hoyne Project coordination org.: Tipperary Rural and Business Development Institute Date: 8th December 2008 Revision: Final

Deliverable Report
Deliverable No.: 3.5
Work Package No: 3

CONCERTO INITIATIVE
SERVE

Sustainable Energy for the Rural Village Environment

Report Title:

Renewable Energy Supply Retrofitting Phase 3 Report

Date: 13/11/2010

Author: North Tipperary County Council

Version: 1

CONCERTO is co-funded by the European Commission

Table of contents

1 Introduction

Phase 3 of Work Package 3 has seen a large uptake in grants, primarily in the wood burning stoves/inserts. There was also an increased uptake in solar panel grants and wood boiler grants. The scheme is continuing to operate with the National Greener Homes Scheme and ReHeat Programme being administered by the Sustainable Authority of Ireland where applicable.

2 Phase 3 of the SERVE Renewable Energy Grant Scheme

The scheme was changed in Phase 3 to increase the number of applications and to meet the SERVE targets. These changes include:

- The opportunity for applicants to apply for grant aid for a combination of energy efficiency and renewable energy measures
- The removal of the C1 energy rating eligibility requirement for grant aid for renewable measures

The targets were also revised following agreed contract amendments with the EU Commission. The changes were as follows:

- Wood Stove/Inserts – 2,600KW reduced to 1,300KW
- Solar Panels remained the same at 400m^2
- Wood Boilers reduced from 900KW to 424KW

The Residential Grant Scheme was launched on the 31/01/2010 and the Non Residential Grant Scheme was launched on 10/02/2010 although there is no separation between the types of buildings for Work Package 3

The scheme was promoted in conjunction with Work Package 1. All Promotion is documented in Work Package 1.12.

The WP partners had to address a number of issues during implementation in 2010.

2.1 Wood Stoves

A lot of work was carried out in Phase 2 by Tipperary Energy Agency on wood burning stoves. This was necessary to accurately define the criteria under which an applicant could get funding for the installation of a wood fuel stove. Considerable confusion and lack of standards exist in Ireland in this regard. The analysis completed by the TEA can be reviewed in Deliverable 3.4. The learnings from this were implemented in Phase 3 and as a result a comprehensive Wood Stove Register was developed for SERVE applicants.

2.2 State Aid Rules

Further work was carried out by the project partners on "State Aid Rules". The ReHeat Programme is a National Renewable Energy Grant scheme for non residential buildings administered by Sustainable Energy Authority of Ireland. Under their terms and conditions co-funding is capped at 40% under state aid rules. Research by the SERVE partners showed that this could be increased based on new EU State Aid Guidelines on Environmental Projection which were introduced (OJ C 81, 03.02.2008) and which were incorporated into legislation in a European Commission regulation in August 2008 (OJ L 214, 09.08.2008). Regulation 800/2008 makes specific provisions for the support of renewable energy projects namely:

- Page 29, Article 23: *"1. Environmental investment for the promotion of energy from renewable energy sources ---------- 2. the aid intensity shall not exceed 45% of the eligible costs.----------However the aid intensity may be increased by 20 percentage points for aid awarded to small enterprises and by 10 percentage points for aid awarded to medium-sized enterprises"* (In effect: Small Enterprises – 65%, Medium Sized Enterprises – 55% and Large Enterprises – 45%)

Considerable effort and research was completed by the SERVE Administrative Co-ordinator from CIRCA on this issue. Discussions were entered into with the Sustainable Energy Authority of Ireland (SEAI) with regard to the 40% ReHeat scheme limit. The conclusion of the discussions was that it was not possible to adjust the 40% limit due to the ReHeat scheme coming to an end in December 2010.

2.3 Micro Wind/PV & Green Electricity Purchasing

The biggest challenge in Work Package 3 is the Wind/PV (Micro generation) and the Green Electricity Purchasing aspects of the project. The micro generation potential in the SERVE area in currently under review by Synergy Econnect, which is a partner in the SERVE Project. This report will look at options and the viability of such installations in the area. Based on this report the WP3 partners will make a decision on how best to progress with the implementation of the actions in this regard.

The Green Electricity Purchasing is also being considered as the regulations and market conditions for green electricity have changed significantly since 2007.

3 Progress towards Targets

Work Package 3	**Target kW**	**Completed to date (kW)**	**In Progress (kW)**	**Required (kW)**	**% Achieved[1]**
Wood Stoves	1300	867	311	123	90%
Wood Boiler	423.65	62	200	161	62%
	Target (m^2)	**Completed to date (m^2)**	**Committed (m^2)**	**Required (m^2)**	
Solar	400	173	91	136	65%
	Target kW	**KW to date**	**Committed KW**	**Required KW**	
Wind/PV	20				0%

Table 3-1: Progress of WP3 Actions

Work Package 3 really gathered momentum in phase 3 as can be seen from the above Table.

The WP partners are confident that the target for the wood stove installations will be achieved and have requested an increase in capacity to facilitate additional installations.

The boiler grants paid to date are for 2 residential applicants and amounts to 62 KW or 15% of the target. It is anticipated that the local secondary school will install a boiler in months 37 – 48. This boiler will be 200kW which would bring the total kW amount up to 62% of the target.

The solar payments for the period amounted to 29% of the target. The total solar m2 committed and paid is 229.33 KW or 57% of the target.

4 Next Phase: Months 27 - 48

Work Package 3 – Renewable Energy Supply Retrofitting will finish in Month 48. Monitoring of the upgrades will continue but the grant scheme will close. It is hoped that all targets will be met by this date.

To achieve these targets there will be a media campaign in Month 39 which will announce the closing dates for the scheme. The focus will on “The Last Chance to Apply for SERVE Grant Aid”. There will be continued promotion through the media, posters, leaflets, and information events over the following months.

The SERVE Grant Schemes experienced difficulties in Phases 1 and 2 due to interaction with the National Home Energy Saving Scheme. It resulted in delays and difficulties in achieving targets. Phase 3 has been suc-

[1] Includes Completed and In Progress

cessful in turning this around. Knowledge in the SERVE region about the schemes is high and word of mouth is driving applications. If applications continue at the same pace it is expected to achieve the targets.

Months 37 & 38 will look at the Micro Generation and Green Electricity Purchasing aspects of the Work Package. The WP Team and the Scientific Coordinator will determine how these aspects will proceed for the remainder of the project

However the work package partners are conscious of difficulties that may arise from the following:

- The National Budget
- The National Retrofitting Programme which will encompass renewable energies and possibly non residential schemes.
- A 200KW boiler for one applicant

The upcoming National Budget in Ireland plans to reduce spending by 6 billion. This will have financial implications for most people and will affect disposable income and the ability of building owners to invest in energy upgrades.

In 2011 it is also proposed to align all the National Energy Schemes. This may include the Greener Homes Scheme and the ReHeat Scheme. A consultation process with stakeholders has taken place over the past number of months and the scheme is currently being developed. Details on the changes to be made will be announced in 2011. If there is a need to introduce changes to the SERVE Grant Scheme then there is a risk of an impact on achievement of targets.

The boiler target is relying on one applicant for a 200kW boiler, if this applicant does not install the boiler the target will be affected.