



**“REgeneration MOdel for accelerating the smart URBAN transformation”**

**HORIZON2020-WORK PROGRAMME 2004-2015 – 10. Secure, clean and efficient energy**

**SCC 1–2014: Smart Cities and Communities solutions integrating energy, transport, ICT sectors through lighthouse (large scale demonstration - first of the kind) projects**

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## **D1.14: Report and policy recommendations on the optimization of the regulatory framework**

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## Abbreviations and Acronyms

Acronym	Description
REMOURBAN	REgeneration MOdel for accelerating the smart URBAN transformation
SCC	Smart Cities and Communities
GNAT	Grand National Assembly of Turkey
SPP	Sustainable Public Procurement (Turkey)
NCCAP	National Climate Change Action Plan (Turkey)
BS	British Standard
GPP	Green Public Procurement
PPL	Public Procurement Law (Turkey)
TPP	Turkish Public Procurement
EMRA	Energy Market Regulation Authority (Turkey)
PAR	Public Administration Reform (Turkey)



## Executive Summary

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The main, core concept that underpins REMOUBAN is the ability to learn and share between and across cities and in so doing, to devise the tools and experience to help optimise the performance and success of urban development.

As REMOURBAN consists of three key areas of intervention – Low Energy Districts (including retrofit of existing buildings and heating and cooling systems) – Electric Mobility and ICT / Integrated Infrastructure, this report has been, where possible separated into those elements for the first 2 chapters.

Successful urban development usually consists of multi-faceted activities around capital build and interventions and REMOURBAN is no different in this respect. However, this report, to be read alongside the preceding report D1.13 and then the following report around integration of urban plans D1.15, accepts the obvious need for capital works and interventions but looks underneath these elements to the non-technical issues around development.

Regulations, directives and policies impact on the successful development of urban areas, in both negative and helpful ways. It also looks at the more difficult and sometimes, random, nature of behavioural issues that can impact on the achievement of proposed and desired outcomes. Sometimes technology has outpaced governance and this has a direct impact on perceptions around interventions, the integration of infrastructure and the use of technology by citizens.

This report considers how the known factors, the regulatory factors and policy drivers, impact on urban development and what we can learn from them. But it also considers how the less predictable behavioural factors of citizens and people within organisations have as significant an impact on the outcomes, albeit ones that is difficult to plan for.

The Workshop held in Brussels in March 2016 highlighted that silo working within public organisations worked against the optimisation of urban development and that there was a need to integrate cross-disciplinary working within an organisation, preferably under the leadership of the Mayor's or Chief Executive's office.

Citizen behaviour would not necessarily follow the anticipated path for perceived or actual reasons and this needed to be understood and accommodated into any regeneration model.

The report also highlights that there is a need for an entrepreneurial mind-set in the public sector, particularly with procurement, in order to do things differently and to use the combined experience and skills of both the public and private sectors to realise new and innovative products and processes to help optimise and maximise impacts. This aligns to the growing appreciation of the need to factor in Green Procurement, Sustainability and Social Values into public procurement processes and values.

# 1 Introduction

## 1.1 Purpose and target group

Deliverable D1.14 follows on and aligns closely to D1.13. It builds on the identification of major barriers, in the normative, administrative, financial and regulatory fields, drawing out good practice and possible solutions to facilitate knowledge transfer and mutual learning. Some of these barriers were considered during the Smart Sustainable Cities workshop in Brussels at the 3<sup>rd</sup> Periodic Meeting in March 2016.

Where D1.13 has its focus on the identification of the main barriers that affect the transformation of a city to a Smart City and subsequent good practice in overcoming these barriers, D1.14 treats this as its starting point and examines the possible ways to adapt or optimise the policy and regulatory frameworks in order to enhance sustainable development in urban areas. Case studies and content from the 3 demonstrator and the 2 follower cities will be utilised as will any good practice that occurs in other cities. The aim of D1.14, as mentioned in the first paragraph, is to facilitate knowledge transfer and mutual learning, both of the likely barriers to successful implementation of large scale projects but also the opportunities for optimisation. With this aim in mind, the target group is not limited to the demonstrator and follower cities and European Commission, but a wide network of officers working in the normative, administrative, financial and regulatory fields who are keen to optimise processes and build on the opportunities for sustainable urban development.

There will be a link across to Work Package 2 as both positive and negative local level tools, leading to a clear definition of an evaluation procedure on sustainability and smartness at a city level, will be developed.

This deliverable will also review and identify good practice with regard to innovative public procurement. It will define an innovative strategy for undertaking innovative public procurement that will include:

- The identification and exploitation of new schemes in the EU Public Procurement directives.
- Develop new tender models
- New procedures for licensing, and
- The training required to enable public procurement officers to become Smart Institutional Buyers.

Deliverable D1.15 will use the information from the cities examined in D1.14 and incorporate it into a new type of strategy for integrating existing urban plans (mobility, energy and digital) and redefine them in a common and unique sustainable urban plan.

## 1.2 Contribution of partners

The following Table 1 depicts the main contributions from participant partners in the development of this deliverable.

Table 1: Contribution of partners

Participant short name	Contributions
NCC	Deliverable leader, Executive Summary, Content to all other sections and Conclusions

VAL	Content to sections 3.1.1 – 3.1.3
TEP	Content to section 2
MIS	
SER	Content to section 7
IBE	Content to section 1.3
DEM	Content to section 2, 3, 4

### 1.3 Relation to other activities in the project

The following Table 2 depicts the main relationship of this deliverable to other activities (or deliverables) developed within the REMOURBAN Project and that should be considered along with this document for further understanding of its contents.

**Table 2: Relation to other activities in the project**

Task/WP	Contributions
WP2	This deliverable links across to the sustainability and smartness evaluation work in WP2
WP3	Financial and business plans in WP3 Task 3.3
WP5	Integrated Urban Plans in WP5 Task 5.5

## 2 Overview of current policies and policy framework

It is intended to review, examine and develop each element of this report within the key areas of interest and work within the REMOURBAN project.

### 2.1 EU Public Procurement Directive

In order to support and enable the central policy of the EU around the freedom of movement of goods and services, the EU Public Procurement Directive provides the basis for transparent and fair procurement across and within the Member States. In this regard it is a central core of the policies that impact on the process of implementation of projects such as REMOURBAN. EU and National Procurement Directives will be covered, here, as an overarching subject as they are based around contract value and process, rather than being specific to any sectors, such as Low Energy Districts, Electric Mobility or ICT / Integrated Infrastructure.

The Directives set out detailed procedures for the award of contracts whose value equals or exceeds specific thresholds. Details of the thresholds, applying from 1<sup>st</sup> January 2016, are given below.

#### The European Public Contracts Directive (2014/24/EU)

	Supply, Services and Design Contracts	Works Contracts	Social and other specific services
Central Government	€135,000	€5,225,000	€750,000
Other Contracting Authorities	€209,000	€5,225,000	€750,000
Small Lots	€84,000	€1,000,000	

How this Directive is applied by partners in Member States of the EU is outlined in UK example in chapter 2.12. Although these Directives do not apply to countries outside the EU, the concepts contained within them and the aspirations, particularly around social values and Green procurement are adopted by progressive countries, particularly when looking for added value and maximising the optimisation of projects and their impact.. An excellent example of this is the process followed by partners in Turkey.

#### EU Developments in Sustainable / Green Procurement – An Overview

The European Commission defines sustainable procurement as the procurement whereby “contracting authorities take into account all three pillars of sustainable development when procuring goods, services or works at all stages of a project”. The definition given by the UK Sustainable Procurement Task Force is worth mentioning when defining the concept of sustainable procurement as “a process whereby organisations meet their needs for goods, services, works and utilities in a way that achieves value for money on a whole life basis in terms of generating benefits not only to the organisation, but also to society and the economy, whilst minimising damage to the environment”. Sustainable procurement is also defined as “only purchasing goods that are really needed, and buying items or services whose production, use and disposal both minimize negative impacts and encourage positive outcomes for the environment, economy and society” and sustainability is defined as the “degree of sustainable development in the context of the organisation” under the British Standard 8903 (‘the BS 8903’), which is the world’s first standard on sustainable procurement.

Sustainable public procurement encapsulates the three pillars of sustainable development: economic development, the protection of the environment and social development. The contracting authorities, though, can prefer to highlight a specific pillar of sustainable development throughout their procurement processes. . In this context, the term “green procurement” is used in this report to define the procurements where the environmental pillar of sustainable development are emphasised, “social procurement” is used to identify procurements where the social pillar of sustainable development are focused and “sustainable public procurement” is used as an umbrella concept to define the procurements where any sustainable development element (economic, social or environmental) is addressed as a horizontal policy [01]. Social and environmental values as well as those of the economic and pricing elements are taken forward by partners in the EU states, as outlined by the UK example in chapter 2.1.2.

### Barriers to Green Public Procurement

The European Commission outlines six main barriers that prevent the dissemination of Green Public Procurement policies throughout the EU. These barriers are:

- having limited established environmental criteria;
- insufficient information on life-cycle costing of products and the relative costs of environmentally friendly products and services;
- low awareness of benefits of environmentally friendly products and services;
- uncertainty about legal possibilities to include environmental criteria in tender documents;
- the lack of political support;
- The lack of coordinated exchange of best practice and information.

As the REMOURBAN project incorporates experience, values and activities from a number of different countries, with a key partner, Tepebasi being outside the EU, this report provides a comprehensive overview of the current and proposed situation around procurement in Turkey as detailed in chapter 2.1.1.

## 2.2 Public Procurement in the UK

As a member of the European Union, the UK adheres to the EU procurement rules and thresholds. As a Local Authority in the UK, Nottingham City Council also maintains a number of procurement requirements for contracts beneath the EU thresholds. The following table shows the procurement routes determined by the value of the contracts.

It is worth noting that decisions taken by Member States, such as the UK in the example below, have additional requirements to those in the EU Directives. In the following example, open, transparent tendering is required at a contract value level below that of the EU Directive.

Table 3: Procurement Policies

Contract Value (in £ sterling)	NCC internal policy if required	Public Services Act Regulations (social value) if required	Procurement team involvement
£1 - £9,999	Demonstrate value for money  If possible, more than one quote – ideally three.  Where possible, ask a minimum of one local supplier		No involvement required unless goods / services are also purchased by another department.

£10,000 - £49,999	3 formal written quotes to be sought via the e-tendering system.		Procurement team to arrange for the tender to go through the e-tendering system.
£50,000 to EU threshold	Above £200,000 consider potential opportunities for employment or training in the delivery of the contract	Above £200,000 Act requires consideration of social value implications of the tender / contract for employment, and training, economic and social impacts.	Procurement team involved at earliest opportunity and full tender required through e-tendering system.
EU Threshold Over £164,197 Supplies and Services	As above	As above	As above with timescales in full compliance with EU Directive.
EU Threshold over £4,104,394 Works	As above	As above	As above

### 2.2.1.1 Public Services (Social Value) Act 2012 and Links to EU Public Contracts Directive

As outlined in chapter 2.1 when considering Green Public Procurement, Value for Money is not always the overriding factor that determines all public sector procurement decisions. In recent years there has been a shift in understanding how value for money should be calculated and growing support for the idea that it should include social and economic requirements.

The Public Services (Social Value) Act [28] is the most significant development in this trend towards embedding social value in procurement. Under this Act, for the first time, public bodies are required to consider how the services they commission and procure might improve the economic, social and environmental well-being of the area.

In 2011 a revised procurement framework was launched by the EC that made clear that social requirements could be fully embraced in procurement practice, providing certain criteria were met, such as ensuring open competition. There has also been support for social value from the European Parliament, with a draft resolution responding to the public procurement Green Paper and the new public procurement directive underscoring the commitment. It specifically extends the list of criteria to be taken into account (and linked to the subject matter of the contract) to “environmental and social characteristics”.

## 2.3 Public Procurement in Spain

**Procurement procedures in Spain** (*Real Decreto Legislativo 3/2011, de 14 de noviembre, por el que se aprueba el texto refundido de la Ley de Contratos del Sector Público*).

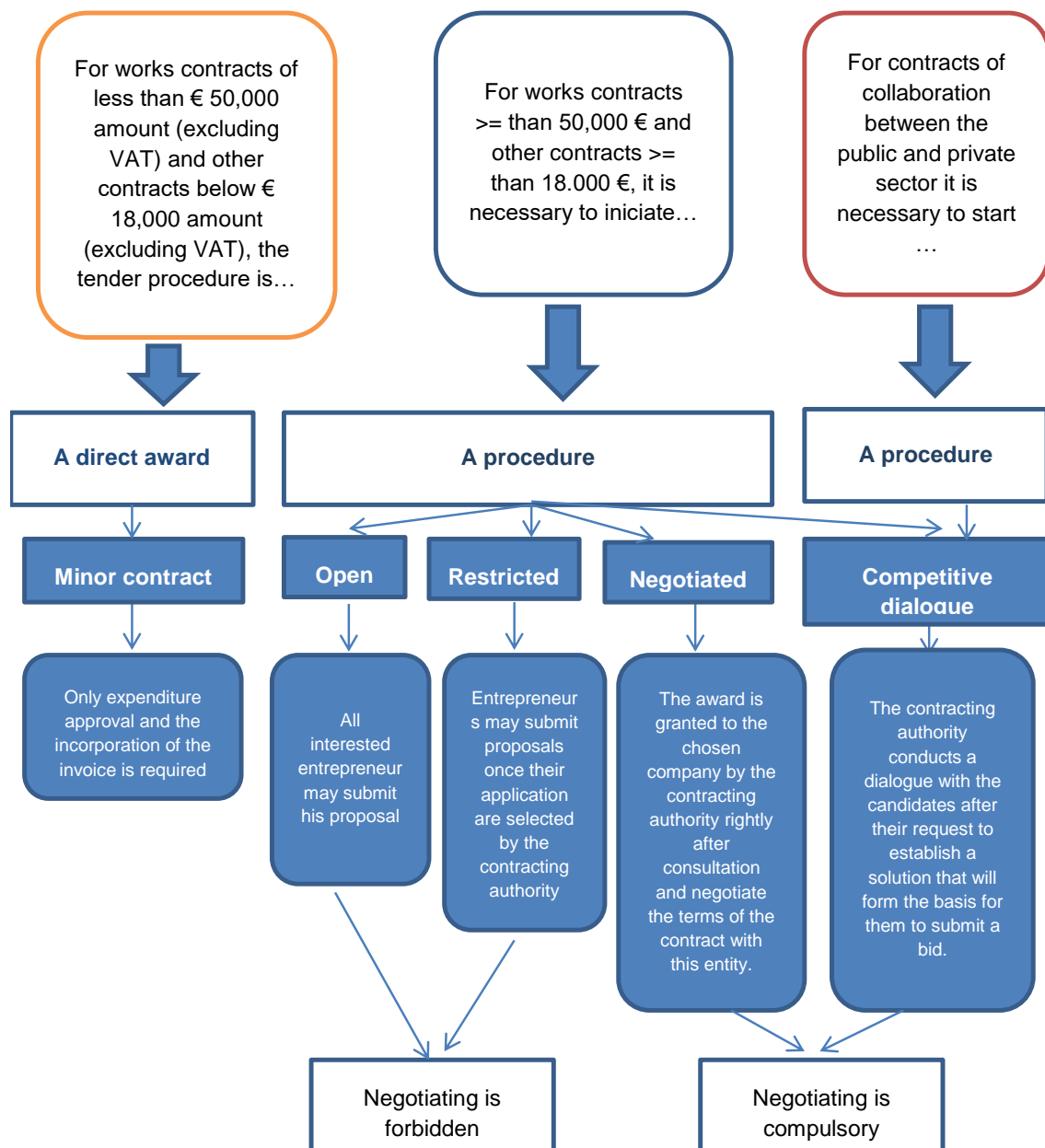


Figure 1: Procurement procedure in Spain

## 2.4 Public Procurement in Turkey

Public procurement has always played a significant role in the Turkish economy, which is the 17th largest economy in the world and 6th largest economy in Europe. The total expenditure on goods, services and works has varied between 10% and 20% of Turkey's GDP in the last decade. Furthermore, the Turkish public procurement market is growing and in 2011 it was estimated that 91 billion Turkish Liras (equivalent to about 29 billion EUR) were utilised by the Turkish public authorities overall.

Public procurement is a dynamic area of regulation in Turkey. The system has been subject to two substantial reforms and a new public procurement reform is on the agenda of the government.



### 2.4.1 Reforming Turkish public procurement: call for governance

Various actors and interests, including international institutions, the political authority, several institutions of Turkish bureaucracy, and international and national capital groups interacted in the formation of Turkey's new public procurement law (the PPL of January 2002) [2].

Another important contextual aspect is the trends in the structure of the Turkish public administration system. Traditionally, Turkish public administration is considered to be centralized. Around the early 2000s, there was a wave of decentralization which allotted more autonomy to local administrations. However, recently there has been a strong trend towards centralization (for instance with new Law of Metropolitan Municipalities).

Turkey's relations with the EU can be considered a significant driver in procurement reform. Turkey received candidacy status from the 1999 Helsinki Summit, which paved the way for various reforms aimed at EU membership. The harmonization of Turkey's procurement system with the EU Acquis became a part of Turkey's National Programme by March 2001. Through the process of procurement reform, the EU Directives constituted a key source of inspiration, together with the UNCITRAL Model Law. Furthermore, the EU provided technical support by reviewing the draft procurement law several times. The World Bank is another key institution. The Bank reviewed the Turkish procurement system in 1997 and 2001, pointing out that the PPL carried 'many outdated provisions, which do not fit the requirements of a modern public procurement system for economy, efficiency, equal treatment and transparency'. As a solution, the Bank called for reforms in line with governance principles; preparation of new legislation in line with the EU and UNCITRAL, improvement of procurement procedures, a fight against corruption and the establishment of an independent regulatory institution responsible for public procurement.

The Program envisaged a public procurement reform aiming to 'establish a more competitive and effective tender system, which will comply with international standards'. A Public Procurement Law Draft was submitted to the Grand National Assembly of Turkey (GNAT) on 20 November 2001 and was ratified on 4 January 2002. There were criticisms of the government for caving in to pressure from the IMF and EU [03]. This claim was not unfounded since the official General Reason of the Draft stated the rationale for the reform as adaptation to EU and international public procurement standards. This compliance with international institutions is indicative of a lack of attention to local conditions and limited domestic support for the reform. The Public Procurement Law of 2002 and the Public Procurement Authority. The PPL of 2002 radically reformed the procurement system by prescribing market-based governance notions. The Reason of the Law and also the subsequent Article 5 frames the overall operation of public procurement with respect to governance principles: 'contracting authorities are liable for ensuring transparency, competition, equal treatment, reliability, confidentiality, public supervision, and fulfilment of needs appropriately, promptly, and efficient use of resources' (Public Procurement Law, 2002: Article 5). The PPL had limited scope regarding incompetence in regulating service procurements, the exclusion of many public institutions, and limits to international tenderers. The PPL aimed to overcome the existing fragmentation and confusion by regulating procurements of all institutions that use public resources.

### 2.4.2 Barriers to Sustainable Public Procurement in Turkey

The Turkish Public Procurement Law has undertaken two major reforms and the main motivations for each reform have always been unification, simplification and modernisation of the legal and institutional framework on public procurement in conjunction with the liberalisation policies. The Turkish Public Procurement (TPP) Act, enacted in 2002, had succeeded in unifying the institutional framework; however, it failed to unify the legal framework due to excessive derogations which were introduced to TPP Act inconsistently [04]. Nevertheless, TPP Act mostly shows similarities and compliance with the EU Procurement Directives. Furthermore,





the Turkish EU Strategy highlights that a new public procurement reform will be conducted in order to bring the Turkish public procurement law in line with the EU Procurement Directives. When the institutional and regulatory framework on public procurement is examined, the following conclusions could be summarised with regard to sustainable procurement can be summarized as follows:

- The diversity of procurement rules emerges as the first significant obstacle to implement sustainable development policies in Turkey. The unjustified exclusions complicate the pursuit of any coherent horizontal policies.
- Amongst the general principles, only the requirement of environmental impact assessment falls within the scope of sustainability. However, this requirement only applies to the procurement of certain works. Lack of a direct provision mandating achieving social and environmental objectives for procurements of goods, services and works is a significant shortcoming.
- On the other hand, the procurement procedures whereby the contracting authorities have a wide margin of discretion to negotiate the technical aspects could be used as tools for the pursuit of sustainable development objectives, despite the lack of an explicit mandate.
- Although different possibilities exist to address sustainable development objectives, there is a need to identify an explicit mandate requiring the contracting authorities to address the social and environmental impact of their procurement activities.

Environmental concerns can be pursued within the technical specifications and eco-labels are a frequent used method. However, Turkey does not have its own eco-label scheme equivalent to either the international environmental labelling programme or the European eco-label scheme. As a candidate state for the EU membership, Turkey is expected to establish an eco-labelling scheme corresponding to the EU law on that matter. In fact, the Turkish Government set the target to work on the Bylaw on Eco-Labels under the National Program of Turkey for the Adoption of the EU Acquis of 2008. The purpose of this bylaw is set as promoting environmentally friendly products to contribute to the efficient use of resources, and to give guidance to provide accurate, non-deceptive and scientific information to consumers on such products. However, the Bylaw on Eco-Labels, that was projected to be prepared by 2011, is still in a draft stage. The promotion of sustainable production and consumption is included in many policy and strategy documents. Most importantly, sustainable consumption and production is only mentioned under the strategy and policy frameworks, not at a legislative level. The lack of normative value for promoting sustainable consumption and production in Turkey, which is a core theme of sustainable development both at the international and EU level, is another significant shortcoming and is the main constraint to implementing sub-themes of sustainability, in particular eco-labelling. Furthermore, the public awareness on the possible benefits of eco-labelling and similar instruments is significantly low in Turkey.

Considering the current status of eco-labels, it is worth examining whether the contracting authorities under the current regime are permitted to ask the tenderers to provide compliance with an international or European eco-label. TPP Act, adopts a strict approach according to the formulation of technical specifications. According to TPP Act, the technical specifications need to be efficient and functional. On the other hand, the Labelling Regulation only permits the contracting authorities to address energy performance issues under the technical specifications which supports the contention that the theme of sustainable consumption is only known and applied in the context of energy efficiency. TPP Act also lays down strict rules on the standards and favours national standards over international standards. Within this context, the current legal framework could not be interpreted as favouring the usage of eco-labels under the technical specifications, except for labels covered by the Labelling Regulation, i.e. energy performance labels.

### 2.4.3 Procurement Procedures in Turkey

Government procurement in Turkey is generally conducted through the issue of public tenders. Five main procurement procedures are applied in Turkey [06]: (i) closed and sealed envelopes, (ii) selective limited tendering, (iii) public bidding, (iv) negotiated procurement and (v) direct competition procedure.

Closed and sealed envelope tendering is normally followed, but other procedures are used according to the value of procurement and/or the type of procurement. In the case of selective tendering, a company may be included in the pre-approved vendor list by developing a reputation as a quality, reliable and experienced supplier. Certain construction work up to TL 16 billion may be procured by the concerned Ministry using the so-called "force account commission" procedure table below [07]. The law provides an escape clause from the normal procurement procedures. According to Article 89, contracts may be awarded without competition if agencies are authorized by the Council of Ministers. Data are not available on the amount of procurement by procedure.

**Table 3: Procurement Procedure from "Public Procurement Law" No: 4734, dated 4 January 2002**

Method	Procedure	Instances when the method is applied
1. Closed and sealed envelopes (Article 36)	Written (closed and sealed envelopes)	Procedure normally followed
2. Selective limited tendering (Article 44)	Written (closed and sealed envelopes) offers from at least three candidates	Procurement of aircraft, warships, war ammunition, electronic equipment, military installations and supplies, weapon and supply systems, activities concerning defence industry, dams, power stations, irrigation systems, harbours, docks, airfields, railways, locomotives, highways, tunnels, bridges, fuel storage facilities, construction work of peculiar nature, works of art having esthetic and technical characteristics, plans for the city road nets, city maps, master and housing plans, water and sewerage systems and energy facilities
3. Public bidding (Article 45)	Oral offers'	Contracts up to TL 40 billion (or 12 billion Euro in February 1998)
4. Negotiated procedure (Article 43, 49 and 51)	Oral offers from at least one candidate	Contracts up to TL 2.5 billion (or US\$0.1 million in February 1998) or If closed and sealed envelopes procedure or selective tendering or public bidding fail; or for police or army requirements, urgent or secret works and a few other special instances (as defined in Article 51)
5. Direct competition procedure (Article 52)	Negotiation	Supervision of study, planning and project works, and works related to fine arts
6. Force account commission (Article 81 (a))	Written (closed and sealed envelopes)	Construction contracts for less than TL 16 billion. Laying ballast in railway construction and road construction materials; telegraph, telephone, and power transmission line construction; and certain

		construction work related to development of villages and military garrisons, or secret construction work, and a few other construction related works
7. Works for peculiar nature (Article 89)	Case-by-case procedure	When it is not possible to enforce the provisions of the law, the provisions may be disregarded by the Council of Ministers upon the proposal by the Ministry concerned. The procedures and rules are determined by the concerned administration and become final on approval of the Ministry concerned

In general, the criteria followed in the award of tenders is that of the most attractive bid in terms of price, although the quality of equipment, services, delivery schedule, availability of spare parts and after-sale service, and previous experience with the suppliers all influence the decision. The availability of supplier credit may determine bid awards for some major procurement schemes. All credit offers must be screened by the under Secretariat of Treasury, which has responsibility for final credit decisions.

Since 2010 there is an internet portal called Electronic Public Procurement Platform (EKAP) [08] where tenders are more transparent and registered institutions can access to all the tenders around Turkey.

#### 2.4.4 Reform Proposals

It is noteworthy that Turkey is currently seeking models to draw a roadmap for the public procurement reforms to stimulate sustainable development, as outlined in Chapter 2.1.1.1.. The EU's sustainable public procurement (SPP) laws and practice provides a useful benchmark for regulating SPP in Turkey, which can be tailored in accordance with the local context of Turkey. . The first pillar requires definition of the objectives of SPP clearly at the legislative level, which must be politically backed by putting forward a clear vision of objectives under the policy instruments. The EU example shows that the strong normative and political value conferred to sustainable development and effective enforcement results in greater consideration of sustainable development criteria in public procurement.

The second pillar is the existence of a coherent institutional framework. In order to promote SPP, the design of both the legal framework and the institutional framework need to be revised, since SPP imposes roles and responsibilities for different stakeholders functioning in a broad range of economic, social and environmental areas. In that regard, SPP needs to be supported by a coherent institutional framework to ensure consistent and clear rules, unified implementation and effective enforcement in light of the EU experience. SPP also requires careful design of mechanisms integrated into the PP legal framework to minimise the cost to value for money and achievement of desired outcomes. In that regard, a delicate balance needs to be established that would avoid discrimination, implement transparency and remove any possible barriers to access to public contracts, and minimise the cost of pursuing sustainable development through public procurement. The legal constraints and the mechanisms that need to be integrated differ for each stage of procurement.

Soft law guidance plays an important role in the promotion of SPP and it could be argued that it is an integral part of the legal framework. The policy instruments such as the EU Sustainable Development Strategy, the Sustainable Consumption and Production and Sustainable Industrial Policy Action Plan, and the Europe 2020 Strategy set a clear vision of the social, economic and environmental objectives of the EU, while Buying Green and Buying Social Handbooks provided a useful and practical guidance about how to integrate these objectives into public procurement proceedings. The soft law guidance, which was accompanied by the institutional guidance of

the European Commission, provided useful outcomes. The European Commission not only elaborated the possibilities provided by the legal framework for the pursuit of sustainability criteria through public procurement, but also laid down amplified methodologies for how to conduct this pursuit. Instruments such as handbooks, databases and toolkits guide the contracting authorities in how they can go beyond the minimum legal requirements without violating the EU procurement rules.

The example of the EU also highlighted the complementary role of jurisprudence in the development of SPP. As explained before, the rules governing the use of public procurement for the promotion of social and environmental objectives mostly emanated from the case-law of the Court of Justice of EU (CJEU). The interpretation of the CJEU clarified the possibilities existing in the legal framework consisting of the EU Treaties and the EU Public Procurement Directives. In that regard, case-laws of the CJEU created a dynamic context for discussion of regulation of SPP in the EU.

Sustainable development substantially influences the regulation of public procurement and orients the direction of public procurement reforms. The strong normative value conferred to sustainable development results in more consideration of sustainable development objectives in public procurement. The example of the EU, which put sustainable development at its epicentre with the explicit aim of strengthening the sustainable dimension of public procurement by allowing it to be integrated at each stage of the procurement process, supports this correlation.

Compared to the EU, the normative value of sustainable development is not strong in Turkey [09]. Sustainable development is at the early stages of evolution in Turkey. Sustainable development is currently mentioned under the Environment Act and the Municipality Act. However, sustainable development is not mentioned under the TPP Act. Sustainable development has a conceptual breadth and magnitude that goes far beyond the protection of the environment. However the current articulation of sustainable development only puts emphasis on the protection of the environment and gives rise to doubts about the implementation of sustainable development in practice. The legal and policy framework on the social pillar of sustainable development is quite fragmented and weak. Although the Turkish Constitutional Court approached sustainable development as a concept deriving from international law, the Court did not scrutinise the scope and substance of sustainable development in its decision in 2009 in accordance with its international dimension.

The legal foundations of sustainable development and its three pillars can be traced within different provisions of the Constitution. The lack of any explicit reference to sustainable development could be justified since the Turkish Constitution was adopted and entered into force in 1982 when the concept of sustainable development had not yet emerged in the international realm. However, sustainable development has increasingly been recognised as an objective of the international community, most importantly by the EU, which Turkey officially wants to be a part of. Currently, there are ongoing negotiations for reforming the Turkish Constitution and sustainable development needs to be addressed explicitly at the constitutional level, following the precedence of the EU. Laying down a clear mandate for sustainable public procurement in law is also necessary in order to comply with the basic principles of administrative law. For instance, Article 123 of the Turkish Constitution requires the structure and functions of any administrative bodies by a legislative act, so-called the legality principle. In that regard, administrative bodies are only entitled to perform duties within the scope of their individual legal mandate. This rule also implies that administrative bodies are by default considered not entitled to perform an action unless a specific act explicitly entitles them to do so. Sustainable public procurement has a conceptual breadth and magnitude that goes far beyond the protection of the environment and covers a broad range of social and economic issues such as stimulating innovation, supporting efficient and clean technologies, enhancing

employment opportunities, decent work, compliance with social and labour rights, social inclusion, equal opportunities, accessibility, designing for all, ethical trade issues.

In some cases, such as fair trade concerns, the issue has a trans-boundary aspect since it has protection of farmers in developing countries. Considering the broadness of the objectives that can fall under the umbrella of sustainable public procurement and considering the explicit limitation of Article 123 of the Turkish Constitution in terms of legal competence, there is a need to lay down a clear mandate under TPP Act, mentioning that sustainability considerations are legitimate concerns that could be pursued by the contracting authorities bound by TPP Act. Indeed, lack of a clear mandate for sustainability concerns under TPP Act also undermines the possible complementary role of jurisprudence for promotion of SPP in Turkey.

The policy framework of sustainable development is also quite fragmented. Turkey has not prepared a standalone and comprehensive strategy on sustainable development encapsulating all pillars. Although the 10th Development Plan, the Turkish Energy Efficiency Strategy and Plan, the Turkish National Climate Change Action Plan, the SME Strategy and Action Plan determines the political agenda, there is not a clear vision. The policy framework, besides being fragmented, is vaguely articulated and there is lack of coordination between the instruments. In that regard, there is a need to prepare a standalone strategy that puts forward a clear vision of sustainable development in Turkey. The strong political value conferred to sustainable development will also result in more consideration of sustainable development objectives in public procurement. Besides being fragmented, the policy instruments are not legally binding, including the 10th Development Plan. The main principles governing the development plans are regulated by the Act numbered 3067 entitled the Implementation and Protection of Integrity of Development Plans, which was promulgated in 1984. Article 3 of this Act brought about a general principle for the adoption of legislative acts and requires the Turkish Grand National Assembly to commission a review of the compatibility of all draft laws, proposals and amendments to the development plans. If the draft laws are not found compatible with the development plans, they may be rejected on this basis. However, this legislation does not grant binding legal status to the development plans: the legislative power is entitled to promulgate legislation that may contradict the development plans.

The stagnation of negotiations in that regard is a significant challenge for Turkey. Nevertheless, Turkey needs to continue the reform processes to achieve sustainable public procurement in line with the approach put forward by the EU despite the stagnation of the negotiations, considering the economic, social and environmental gains that could be achieved. In that regard, Turkey needs to benefit from the EU's and the Member States' experience on that matter. As stated previously, Turkey is currently seeking models to draw a roadmap for the public procurement reforms to stimulate sustainable development. For instance, there are ongoing projects such as Green Procurement Project, which seeks the possibilities for ensuring procurement of more efficient equipment, vehicle and buildings in public institutions; project for increasing energy efficiency in the public sector, and a project for facilitating SMEs' participation in public procurement. It is noteworthy that Turkey, through benefiting from the experience of the EU and through learning about the individual practices of the Member States, could establish a sustainable public procurement system with no significant cost. In brief, the legal and political status of sustainable development needs to be strengthened, and the promotion of sustainable public procurement and meeting the EU law needs to be evaluated in a context that is separate from the political debates surrounding the membership negotiations with the EU.



## 2.5 National Directives and Policies

### 2.5.1 Low Energy Districts

#### 2.5.1.1 United Kingdom

Global discussions and actions around tackling climate change have informed national government policy over the past 10 years.

The current UK National Energy Plan [29] has the objective of cutting greenhouse gas emissions by at least 80% by 2050 compared to 1990 levels. As recently as November 2015 the UK Government's Energy and Climate Change Secretary set out the Government's vision for an energy system that would put consumers first, deliver more competition, reduce the burden to bill-payers and ensure a security of electricity supply.

The policy priorities include:

- Consultation on ending unabated coal-fired power stations by 2025.
- Making new gas-fired power stations a priority.
- Commitment to offshore wind support in order to support the Government's commitment to secure, low-carbon, affordable electricity supplies.
- Move towards a smarter energy system.

### Energy Efficiency

Reduction in domestic energy emissions is expected to make a significant contribution to the UK's 2020 and 2050 carbon reduction targets. In 2011 The Carbon Plan [30], published by the Government, set out the policies for achieving the carbon budgets and stated that by 2050 all buildings would need to have an emissions footprint close to zero (HM Government, 2011).

The UK has one of the oldest and least efficient housing stock in Europe, with two third of the housing stock expected in 2050 already existing now.

UK housing survey data is compiled for the Government's UK National Energy Efficiency Plan [31], this shows that from 27 million current existing homes, over three quarters were built before 1980 and one fifth are more than 100 years old. All of these were built before Building Regulations introduced energy efficiency standards, and yet all are expected to have an emissions footprint close to zero by 2050. Therefore significant energy efficient retrofit is needed to help the UK realise the challenging carbon reduction targets.

Supplier obligations, funded through levies on energy bills, have been the main instrument for carrying out insulation work and energy efficiency improvements for existing domestic buildings since 1994. Supplier obligations in recent years include Community Energy Reduction Target (CERT) [33] and Community Energy Saving Programme (CESP) [34] which were prior to the current Energy Company Obligation (ECO).[35] Alongside the supplier obligation central Government funding including Green Deal Home Improvement Fund (GDHIF) [36] Green Deal Communities (GDC), and Green Deal Cashback have been used to fund and incentivise domestic energy efficient retrofit.

CERT was the most successful supplier obligation to date, seeing 3.9 million lofts and 2.5 million cavity walls insulated over 2008 - 2012. 59,000 solid wall properties were also insulated, with 75,000 being insulated by CESP, the area based scheme which ran alongside CERT. CESP was aimed at fuel poor areas. Through funding a range of different energy efficiency and heating measures in these areas it sought to develop low energy districts.

Government policies are focussed on reducing emissions in the most cost effective way and therefore tend to focus on the cheaper measures such as loft and cavity walls, which is why a

far higher percentage of these have been insulated to date. However if all buildings need to be near to zero carbon by 2050 then all existing homes will need to be addressed, including those requiring more expensive insulation measures.

The 2011 Carbon Plan suggested that the best way to meet the EU 2020 carbon reduction targets, for domestic properties, is to ensure all practicable lofts and cavity walls are insulated, but on top of this at least 130,000 low carbon heat installations must be installed, old boilers need to be replaced with condensing boilers, Smart meters [39] must be installed in all dwellings, and up to 1.5m solid wall homes should also be insulated (HM Government, 2011).

In 2013 the UK Government introduced the Green Deal alongside the revised supplier obligation; ECO. The Green Deal brought with it significant regulatory requirements on the basis that finance was attached to retrofit measures with a lifespan in some cases of 25 years. Organisations were able to register as 'Green Deal Providers' or 'Green Deal Installers' which theoretically meant they met a quality standard called PAS2030 [40], and abided by the Code of Practice. This was intended to give consumers confidence when procuring retrofit services or works.

The intention of the Green Deal was to change energy efficiency retrofit from being a grant funded industry to one which is market driven. The Green Deal set out a framework for improvement work to be funded by private finance, paid for over a long period of time and linked to the savings in energy bills which are achieved by the installation of the measures. The Government expected that this policy would increase the amount of energy efficiency retrofit work taking place, helping to meet 2020 and 2050 carbon targets, as well as reducing dependence on grant funding for domestic retrofit.

It is a logical idea for money to be spent on delivering energy efficiency works, thus providing carbon reduction, jobs, and comfortable homes, particularly when this is not new money but a redirection of money currently wasted on energy leaking from buildings. It is also fairer for residents in improved homes to be paying for the cost of retrofit out of the energy savings they make, rather than all residents contributing, which is the way that supplier obligations work. However a sensible concept is not necessarily simple to deliver in practice.

The Green Deal required the loan to be attached to the electricity meter which means the loan will stay with the property even when the resident who took out the loan moves to a different house. The loan repayments were paid through the electricity bill, shown as a separate standing charge. This meant the loan can be taken over a much longer period, which was useful when some energy efficiency refurbishments cost more than £10,000. However this also meant that when consumers default on their energy bill, which eventually ends up with the bill being written off, they would also default on their Green Deal loan; a risk for Green Deal Providers. Different energy efficiency measures have different lifetimes over which the loans were to be repaid. For example the cost of solid wall insulation could be repaid over twenty five years, whereas boilers were to be paid for in ten years.

In theory the introduction of the Green Deal supported delivery of area based energy efficiency retrofit projects as well as individual homes, as in some cases it took away the need for a resident to be able to pay for the installation of measures up front. The Green Deal hinged on 'The Golden Rule' which meant the annual savings generated from the energy efficiency improvements had to be enough to pay the annual costs for the loan in the first year of installation, based on current fuel prices. If fuel prices rose as quickly as expected and above the rate of inflation, people who took out a Green Deal would be protected from price rises as their consumption would be lower and the loan cost would only increase at the rate of inflation. However because individuals were only permitted to borrow the level which the golden rule said they would save for each measure installed in many cases there was a shortfall between the amount a resident could borrow and the cost of works and therefore they still had to find some



money to pay for works up front. This meant the Green Deal alone was not suitable for expensive measures, and therefore differed from areas of best practice seen elsewhere in Europe, such as the German KfW loan model which does not have a cap such as the golden rule, and which has a lower interest rate the greater the energy efficiency standard, thereby incentivising expensive measures and whole house retrofit.

The KfW loan is heavily subsidised by the German Government. The Green Deal was not subsidised directly by the UK Government, but funds were put into the Green Deal Finance Company. Even so the loan rate for individuals taking out Green Deals was around 7%, and there were high administrative costs. There were also issues with the customer journey, due to the complex framework which the UK Government had put in place. The Green Deal was therefore significantly less popular than the Government expected and late in 2015 they announced that the Green Deal would finish. Residents who had already taken out Green Deal loans would continue with those, but no new loans would be provided.

Historically there have been few regulatory interventions to encourage private domestic energy efficiency. Instead the UK Government has opted to set up a framework and encourage take up through funding policies. However in line with Climate Change Committee recommendations, a statutory target for a minimum energy performance will be introduced from 2018 for private sector landlords. This will prevent lenders from letting properties with an Energy Performance score of F or G. There are currently no minimum performance requirements proposed for home owners, and also no Government led incentives, although schemes such as stamp duty relief or lower Council Tax have been suggested as potential opportunities.

Social housing providers do not have a minimum energy standard, and they also no longer have to report annually to the social housing regulator, The Homes and Communities Agency (HCA) [37] on their average SAP score. The Decent Homes Standard<sup>1</sup>[38]

] required a level of thermal comfort, although the level was open to interpretation. All social housing is expected to achieve the 'Decent Homes Standard' by 2016, some 7 years later than originally expected.

Whilst the level of funding, the way in which it is levied, and the measures on which it is spent are subject to changing advice, there is a consistent theme from Government advisory committee CCC that Local Authorities are required to deliver energy projects, highlighting that this already happens in the devolved administrations, and also suggesting Local Authorities could target fuel poor homes and delivery to areas which have a lot of fuel poor residents (CCC, 2013, 2014).

Over the last couple of years, innovative solutions have been proposed for area based schemes, which are shown to incentivise take up of more expensive retrofit measures, such as solid wall insulation. The Institute of Public Policy Research advocates a 'House by House' approach, delivered by Local Authorities or local trusted partners. This would target fuel poor areas, and subsidise work to those residents who cannot afford to take out a Green Deal or alternative loan whilst reducing the interest rate for Green Deal to make it a 'Great Deal'. To ensure landlords led these schemes, they would be mandated to insulate solid walls, but also receive subsidy.

In 2014 the Government launched the 'Green Deal Communities'. Recognising the potential which Local Authorities have to deliver area based schemes, this took a similar approach to

<sup>1</sup> The Decent Homes Standard was originally introduced in 2000. The Government suggested all social housing should meet the standard. The standard is primarily about the state of repair and modern facilities, but also includes a requirement for a good level of thermal comfort, which includes insulation and a heating system. However loft insulation is deemed sufficient and double glazing is not considered a mandatory requirement by all landlords.



some of the Welsh and Scottish schemes, targeting a street by street approach to solid wall insulation, funded through taxation. 23 Local Authorities successfully bid for this funding. All of these had to set up their own projects, including procuring their own partners. Nottingham City Council was a recipient of this funding, which was aimed at private residents only.

The funding was given during a period of significant changes to UK energy efficiency policy, which are shown on the timeline below. This timeline shows the most recent energy efficiency policy period. Since these policies, nothing new has been introduced; rather Green Deal has been stopped completely, and ECO funding has been running its course to the published end date in March 2017. Local Authorities with Green Deal Communities have been delivering their projects, with these expected to finish by September 2016. Currently, no plans have been published for energy efficiency retrofit policy post March 2017.

It is expected that policies will not be announced until the results of the Government commissioned 'Bonfield Review' [Not released as of 01.07.16 ] are published in spring 2016. This review is exploring domestic carbon saving schemes such as ECO and Green Deal, as well as renewables and Smart metering, and focusing on the customer perspective.

In the early months of 2016 the Government has also been consulting with Local Authorities about the future of the Energy Company Obligation. The current obligation was due to end in March 2017, after which it was expected there would be a year when no funding was available. Due to industry campaigning, there is potential that this decision has been reviewed, and that the ECO funding will now be extended for one year. However this has not been formally announced.

### **SMART Metering**

The government has mandated that all Energy Companies roll out Smart metering by 2020. All domestic customers should have been offered a Smart meter by 2020. The roll out has been delayed each year since its initial stated introduction in 2013. However it is expected to finally start in Autumn of 2016. Key elements of the relevant political timeline in this area are outlined below:

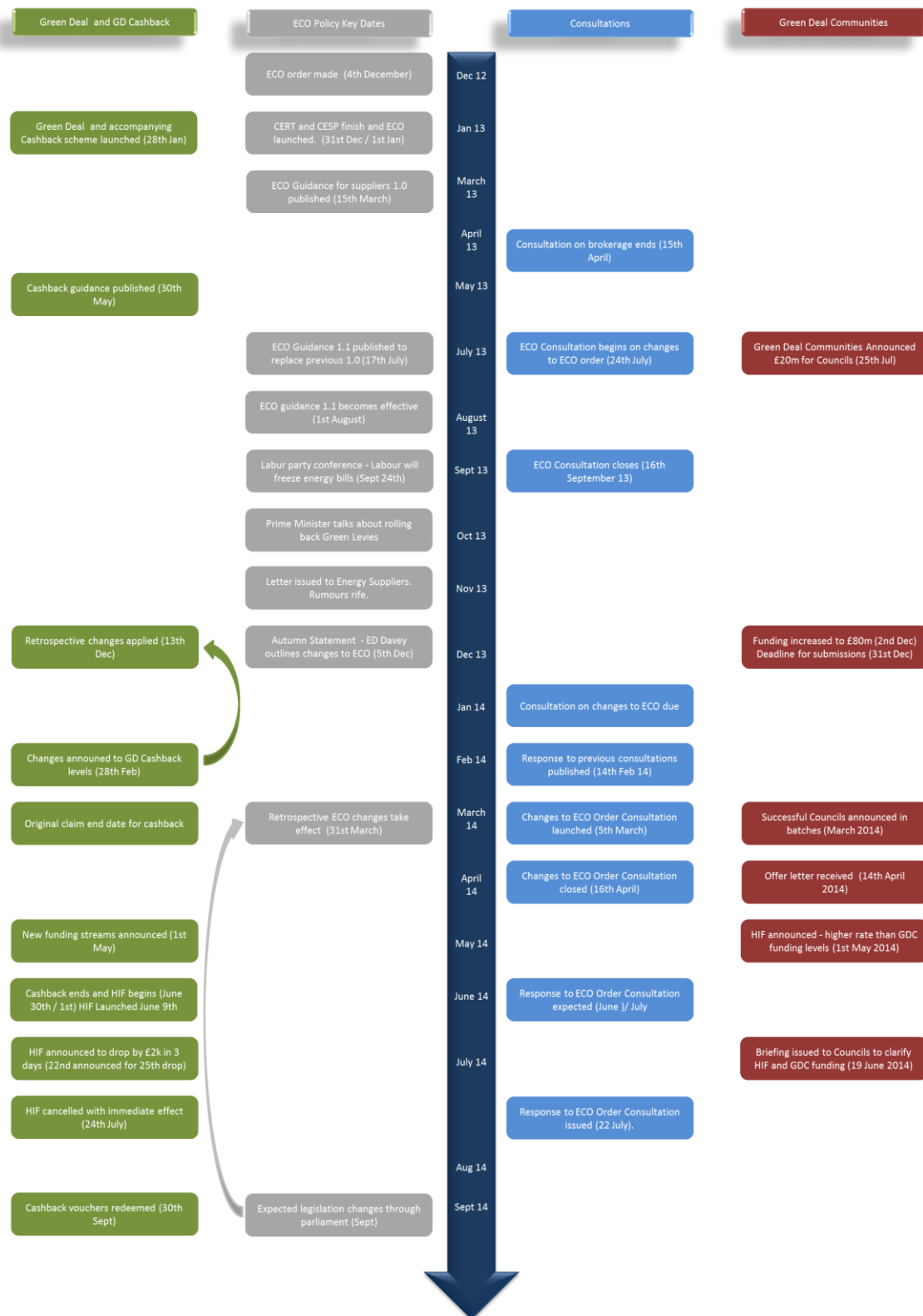


Figure 2: Key elements of the relevant political timeline

### Renewables

The Feed in Tariff which was used to incentivise significant take up of PV systems in the UK has recently been reduced to 4.32 pence from April 2016. This was because the Feed in Tariff was so popular, when first introduced, that the take up far exceeded the expectations.



### 2.5.1.2 Spain

As in the case of the UK, Spanish legislation sets out rules for an efficient energy system with measures that -although challenging to implement- contribute to ensure clear benefits.

On 25 October 2012, Directive 2012/27/EU of the European Parliament and of the Council on Energy Efficiency (EED) was approved in order to create a new common framework to promote energy efficiency within the Union, establishing specific measures to ensure achievement of the target indicated in the 2020 Climate and Energy Package from 2007 to reduce Member States' energy consumption by 20%.

This new 2012 Directive lays down additional cumulative savings targets for the 2014– 2020 period which, not only places a disproportionate burden on countries which, like Spain, have already made significant efforts in this area in previous years and are going through a phase of economic recovery since emerging from a long period of recession, but the mechanisms arbitrated by the EED for their fulfilment do not offer the most technically and economically effective approach to promoting energy efficiency.

On the one hand, in order to achieve the additional targets deriving from the new Directive, Spain will have to reduce its energy consumption by 26.4% by 2020, which is far higher than the rate envisaged for the Union as a whole. On the other hand, there is no doubt that Spain's building sector, for example, like in most of our surrounding countries, has an enormous potential for energy saving, with very positive medium and long term returns; however, under the new Directive only short term savings would be considered, driving away efficient investments which would have generated substantial economic activity. In any case, Spain is fully committed to achieving the energy efficiency improvement targets established in all areas of Energy Efficiency Directive 2012/27/EU, and reiterates its commitment through the presentation of this new **2014–2020 National Energy Efficiency Action Plan**.

The structure of the 2014–2020 NEEAP responds closely to the content required by the Directive, setting out the energy efficiency improvement measures. It contains information on fulfilment of the indicative target of achieving a 20% primary energy saving by 2020 established as a target by the Climate and Energy Package, while it also evaluates the final energy savings achieved in the 2010–2013.

Spain wants to make use of all the instruments and facilities afforded by the Directive, implementing not only a system of energy efficiency obligations for energy sales companies, but also alternative measures of action allowed under the Directive concerning fiscal and regulatory matters, training, communication campaigns, etc. This system of obligations will be backed by the creation of an **Energy Efficiency National Fund**. These instruments will help ensure that new energy savings are achieved every year on annual energy sales to final customers of all energy providers, from 1 January 2014 to 31 December 2020. The Plan includes a wide range of energy saving and efficiency measures for all sectors.

One of the most prominent of these measures are **the Aid Programme for the Energy Renovation of Existing Buildings** used in the residential housing sector and hotel industry (PAREER); the **'Sol' Environmental Stimulus Plan for the energy renovation of hotel facilities**, and the 2013–2016 state incentive plan for rental housing, building renovation and urban regeneration. Supporting these initiatives are **Law 15/2012 of 27 December 2012 on fiscal measures for energy sustainability**, in effect since January 2013, and a broad-focused national communication campaign on energy saving and efficiency. In conclusion, the 2014–2020 National Energy Efficiency Action Plan will serve as a central tool of Spanish energy policy and its implementation will help to achieve the energy saving and efficiency targets set by Directive 2012/27/EU, improving the competitiveness of the Spanish economy, which will be reflected in business and employment rates.

Concerning other energy efficiency measures in the building sector, legislative measures are particularly focus on the hotel industry, all fall under the provisions of Directive 2010/31/EC on the energy performance of buildings, which lays down minimum energy efficiency requirements to be fulfilled by both new and existing buildings under development, the procedure for their energy certification and for performing periodic energy efficiency audits, and the construction of nearly zero-energy buildings.

This Directive has been transposed to Spanish legislation by different Royal Decrees:

**Royal Decree 314/2006 of 17 March 2006 approving the Código Técnico de la Edificación (CTE) (Technical Building Code)** which has been updated by Order FOM/1635/2013 of 10 September 2013. This order has raised the level of the minimum energy efficiency requirements contained in the Basic Energy Saving Documents which will apply to new buildings and to the expansion and renovation of existing buildings for which work permits are requested starting March 2014. Of its six components, the first three focus on energy efficiency and the last two on the incorporation of solar energy and renewable energies in buildings.

Those on energy efficiency are as follows:

- Document DB HE0 - Limitation of energy consumption: limits consumption of non-renewable primary energy in new buildings or existing buildings being upgraded used for private residential use. In the case of other-use buildings, the limitation is set based on energy rating using the primary energy consumption meter, which must achieve an efficiency rating of class B or higher.
- Document DB HE1 - Limitation on energy demand for heating and cooling: toughens the insulation requirements for façades, roofs and hollows from the previous CTE and lays down criteria for procedures in existing buildings.
- Document DB HE3 - Energy efficiency of lighting installations: provides that lighting installations must reach a certain energy efficiency level depending on their use. It also introduces obligations related to the regulation and control of lighting and, in particular, to the use of natural light in peripheral areas around the building. The energy efficiency of a lighting installation in a given area shall be determined using the installation energy efficiency value ('VEEI'); the installed lighting electrical power is also limited. Under Directive 2010/31/EU Member States must ensure that all new buildings are nearly zero-energy buildings by 31 December 2020 and that, before the end of 2018, new buildings that are occupied and the property of public authorities are nearly zero-energy buildings. The update to the Basic Energy Saving Document, DB-HE and the requirements laid down therein constitute the first step forward towards the target of achieving buildings of this type.

**Royal Decree 1027/2007 of 20 July 2007 approving the Regulation on Building Heating Installations** (updated by Royal Decree 238/2013 of 5 April 2013 amending certain articles and technical instructions of the RITE) regulates the minimum output requirements applicable to heating, cooling, ventilation and domestic hot water systems and periodic energy efficiency audits, as well as the design, size, assembly and maintenance of such systems.

**Royal Decree 235/2013 of 5 April 2013 approving the basic procedure for the energy efficiency certification of buildings** lays down the obligation to provide to the buyers or users of buildings an energy efficiency certificate which includes objective information on the energy efficiency of a building and reference values such as minimum energy efficiency requirements such that the owners or tenants of the building or a unit thereof may compare and evaluate its energy efficiency. It also implements the basic procedure to be followed in calculating energy efficiency ratings, considering factors which have the most influence in terms of energy consumption, as well as technical and administrative conditions for building energy efficiency certifications. The competent bodies of the autonomous communities must create a statistical



inventory of measures related to certificates registered by them, which will serve as a crucial mechanism for planning measures to improve the energy efficiency of the existing stock of buildings and for monitoring compliance with the rule. Moreover, information programmes on the energy rating of new buildings (called 'CALENER') and existing buildings (called 'CE3' and CE3X') have been made available to the public, alongside a training and information plan.

In addition to this legislation, **Law 8/2013 of 26 June 2013 on urban renovation, regeneration and renovation**, which includes the obligation for housing block buildings for which any nature of public assistance is requested to draw up a building evaluation report comprising three documents, one of which is the building's energy certificate, promoting the renovation of buildings according to energy-based criteria. This report must be drawn up and an energy efficiency certificate obtained, by all collective residential dwellings more than 50 years old, within a period of five years, starting from the date on which they reach that age. Such documents are also required from buildings benefitting from public aid, such that in the 2014–2020 periods a significant portion of the stock of existing buildings shall be required to obtain an energy certification. This will require some of those buildings to implement the energy efficiency improvement measures recommended in the energy certificate.

In addition to the foregoing legislative measures, Spain has developed different economic support measures which are part of **policies to encourage the energy renovation of buildings**, including buildings in the tourism sector, such as:

- **PAREER: Aid Programme for the Energy Renovation of Existing Buildings used in the residential sector (housing and hotel use)** approved by IDAE Resolution of 25 September 2013. Its goal was to encourage and promote the implementation of integral measures which favors energy saving, energy efficiency improvement and the use of renewable energies in existing buildings. Assistance is granted in the form of a monetary provision without compensation or repayable loan, depending on the type of measures (thermal envelope and heating and lighting installations).
- **JESSICA-FIDAE fund for financing the renovation of non-residential buildings**, among other measures.
- **PIMA SOL environmental stimulus plan, aimed at financing the energy renovation of hotels**. Promoted by the Ministry of Agriculture, Food and Environment. – State plan for the promotion of rental housing, building restoration and urban regeneration and renovation, 2013–2016 (Royal Decree 233/2013) of the Ministry of Development, aimed at promoting the energy renovation of residential buildings. Includes a residential building renovation programme aimed at improving energy efficiency. Measures eligible for subsidy include improving the thermal envelope of buildings to reduce energy demand for heating and cooling, installing heating, cooling, domestic hot water and ventilation systems and common building facilities such as lifts and lighting. To qualify for subsidies, the building's total annual energy demand in terms of heating and cooling must be reduced by at least 30% compared to the levels taken before implementation of the measures, as demonstrated by the energy certificate.

All these elements included in the Spanish Strategy for Energy Renovation in the Building Sector will ensure the acceleration of the development of the energy efficiency obligation scheme.

### 2.5.1.3 Turkey

Urban planning system in Turkey can be described under four main hierarchical levels.

- National Strategies and Development Plans,
- Regional Plans,
- Environmental Order Plans,



- Construction and Development Plans

The main driver of resource efficiency policies in Turkey is resource scarcity; 72% of energy is currently imported. Thus increasing energy utilization efficiency and increasing utilization of domestic renewable resources is a key policy [10].

#### **National Strategies and Development Plans,**

The first layer is the National Plans which create a strategic framework and concern general policies and action plans. The Regional Plans are prepared in the scale of 1/100.000 and their status, law sanction and ownership are inexplicit in Turkish planning system.

In modern cities, national plans and programs should be evaluated according to strategic priorities with multi-dimensions. Because city operations and applications have to be coherent with macro policies, city visions require that they are simple, planning authorization is efficient, plan hierarchy is congruent and effective application tools are at hand.

#### **Resource efficiency and sustainable consumption and production in the Tenth Development Plan (20014-2018)**

Development Plans, which are normative for the public sector and guiding for the private sector have a strategic structure that lays down a macro framework, increases predictability, emphasizes the institutional and structural arrangements that will enable more efficient functioning of the system and focuses more on basic objectives and priorities.

The Plan is a key policy document that lays down the transformations Turkey will undertake in economic, social and cultural areas with an integrated approach. In this respect, the Development Plan has a guiding function in the policy development and implementation process.

During the plan period, Urban Development Strategy has been put into practice and significant regulations were introduced. Through a legislative regulation, the Ministry of Environment and Urbanization is commissioned with the preparation of strategic spatial plans, and authorized to define main principles, strategies and standards for the preparation and implementation of all physical plans in all scales.

With the same regulation, metropolitan municipalities were assigned to prepare environmental arrangement plans at provincial level. Spatial planning system will be transformed into a structure where central government will assume a regulatory and supervisory role and where planning and implementation will take place locally, which would strengthen the common decision-making processes.

#### ***Some of the policies related with energy and emissions are;* [11]**

- Environmental sensitivity and life quality will be improved with practices such as waste and emission reduction, energy, water and resource efficiency, recycling, prevention of noise and visual pollution, usage of environment friendly material in line with sustainable cities approach.
- Environment friendly practices in production and services such as renewable energy, eco-efficiency and cleaner production technologies will be supported and developing and branding of new environment friendly products will be encouraged.
- Green growth opportunities on areas such as energy, industry, agriculture, transportation, construction, services and urbanization will be evaluated and new business areas, R&D and innovation that provide environment sensitive economic growth will be supported.

Through these efforts, government would like to prepare a suitable environment where smart/sustainable city requirements can be met by public and private actors. There is an



increasing necessity of enhancing the quality of urban life, strengthening the economic and social structure, reconfiguring of spatial planning system in Turkey.

In recent years, governmental bodies like Ministry of Environment and Urbanism, Ministry of Internal Affairs or Ministry of Transport have prepared strategic action plans. The main reason behind these efforts is to create an ecosystem for comprehensive management in desired areas.

With the increased usage of ICT systems; ministries and their departments aim to give better services to citizens. For example; the vision of Ministry of Transport is to provide and monitor transport, information and communication services for all users in a qualified, balanced, safe, environmentally friendly, fair and economic manner. Under this vision, ministry's mission is to increase global competitiveness of the country and quality of life for the citizens by providing transport and communications services over the level of modern best practice [12].

Sustainability concept and resource efficiency strategies that have been adopted in the above mentioned strategies at national level are elaborated under sector-specific strategies. Industrial strategy and action plan for small and medium sized enterprises (SMEs) are ready; energy efficiency, waste and water strategies are still being improved. Additionally, there are various legislation to increase resource efficiency especially in energy sector.

To increase resource efficiency consumers had insulation in their residential buildings. Also, the fact that insulation material consumed per capita in Turkey is 10 times less than Europe clearly demonstrates the main reason for the energy loss in our buildings. The building stock before 2000 consumes double the energy envisaged by existing regulations even when only the presently applicable building standards are concerned. Energy efficiency potential for buildings, according to the General Directorate of Electrical Power Resources Survey and Development Administration, is 35% and with 10 million more residences to be insulated, the cooling and fuel savings until 2023 are estimated to be 2,400GWh and 2.3 million TEP, respectively.

### **Energy Efficiency Strategy Paper 2012-2023 [13]**

The paper was published in 2012. The objective of the document is to determine a political set supported with result focused and concrete targets and to define the to be made activities necessary for reaching targets together with the enterprises responsible for making these activities; to act in the framework of a collaboration and participatory approach of public and private sector and NGOs.

It is targeted with this document to decrease at least 20% of amount of energy consumed per GDP of Turkey in the year 2023 (energy intensity). Some of the targets mentioned in the strategic paper;

The strategic objectives in the strategy can be summarized as;

- To decrease energy demand and carbon emissions of high energy efficiency buildings and promote sustainable environment-friendly buildings using renewable energy resources
- To provide Market Transformation of Energy Efficient Appliances
- To increase energy efficiency in power production, transmission and distribution and to decrease energy losses and emissions
- To strengthen institutional structure, capacity and cooperation, increase use of advanced technology and increase awareness activities, establish financial mechanism other than public sources.

### **National Climate Change Action Plan – NCCAP-İDEP (2011-2023) [14]**

Ministry of Environment and Urbanisation has prepared and initiated the National Climate Change Action Plan. This action plan is the first strategy document for Turkey that includes green growth principles. With this Plan, Government has declared that using alternative

renewable energy resources and diversify energy supply in a wide variety of sectors, including industry and residential areas is imperative.

National Climate Change Action Plan was approved by the government in 2010. The National Vision in this strategy is defined as follows:

"Turkey's national vision within the scope of "climate change" is to become a country fully integrating climate change-related objectives into its development policies, disseminating energy efficiency, increasing the use of clean and renewable energy resources, actively participating in the efforts for tackling climate change within its "special circumstances", and providing its citizens with a high quality of life and welfare with low-carbon intensity."

Besides supporting the global efforts for prevent climate change, National Climate Change Strategy Plan as a framework creates numerous purposes and advancements in different sectors. Purposes of NCCAP related with Low Energy Buildings and Districts are as follows:

#### Energy:

- Reduce energy intensity. Reduce primary energy intensity by 10% compared to 2008 by 2015 as a result of implemented and planned policies and measures
- Increase the share of clean energy in energy production and use
- Limit Green House Gas emissions originating from use of coal in electricity production, by using clean coal technologies and taking efficiency-increasing measures
- Reduce losses and illicit use in electricity distribution

#### Buildings:

- Increase energy efficiency in buildings
- Increase renewable energy use in buildings
- Limit greenhouse gas emissions originating from settlements
- Issuing "Energy Performance Certificates" to all buildings until 2017
- At least 20% of the annual energy demand of new buildings met via renewable energy resources as of 2017
- Reduce greenhouse gas emissions in new settlements by at least 10% per settlement in comparison to existing settlements

#### Cross-cutting Issues:

- Establish necessary infrastructure for a robust emission inventory
- Develop policy for environmental protection, and strengthen implementation capacity in consideration of climate change and within the framework of sustainable development principles
- Effectively utilize financial resources for combating and adaptation to climate change
- Optimum usage of emission trading mechanisms that contribute to cost-effective limitation of greenhouse gas emissions
- Ensure coordination in climate change mitigation and adaptation activities to increase effectiveness
- Carry out Turkey's regional climate modelling studies and analyze the effects of climate change
- Develop R&D and innovation capacity for eco-efficiency with regard to combating climate change and adaptation
- Improve human resources with regard to combating climate change and adaptation to climate change
- Increase public awareness to change consumption patterns in a climate friendly manner



The National Climate Change Action Plan has various actions that can be correlated with pillars of the REMOURBAN model which are low carbon districts, mobility and integrated infrastructures. Some of strategic actions can be grouped as the following;

### Strategic actions in NCCAP relevant to low carbon districts

- Identifying energy efficiency potential and priorities in order to ensure heat insulation and energy efficient systems in buildings
- Reducing the energy consumption of buildings and premises of public institutions
- Developing policies and legal arrangements for energy-efficient and climate sensitive settlement building, and implementing them through pilot projects.

Developing policies and legal arrangements for energy efficient and climate friendly settlement/building, and implementing them through pilot projects.

### National Renewable Energy Action Plan [15]

The Government has established very ambitious objectives for 2023 regarding electricity generation based on the high availability of renewable energy resources: hydro, wind, solar irradiation, geothermal, etc., which would increase the share of renewable energy in electricity generation to at least 30% and 127.3 TWh in 2023.

It is also important to note that primary energy consumption in Turkey reached 121 Mtoe in 2012, where 82% of the total figure was from imports. In addition, the energy intensity (unit of energy consumed to generated unit GDP) in the country was 0.27 toe per USD 1,000 of GDP and is higher than in the rest of major EU countries.

The objective of Turkey's national Renewable Energy Action Plan (REAP) presented under Directive 2009/28/ EC is the establishment of strategies to promote the development of renewable energy in Turkey. These strategies are set to:

- Ensure that the share of renewable energy in electricity production has increased to 30% of the total demand by 2023, based on the high accessibility of renewable sources in Turkey.
- Fulfil the level of usage of renewable energies in transportation established in the Directive 2009/28/EC: a 10%share of renewable energy in the transportation sector.
- Ensure technological and industrial development based on the installation of a higher renewable energy capacity by 2023.
- Plan use of renewable energy resources taking into consideration the impact of climate change and sustainability to the ecosystem, orienting plans toward the mitigation of climate change (3).
- Avoid obstacles in developing renewable energy in the country, by enabling the following:
  - financial support for projects,
  - removal of barriers linked to the administrative process,
  - develop legal framework for the implementation of new solutions,
  - provide secure access to renewable energy for electricity generation
  - optimize the usage of any relevant infrastructure - develop support mechanisms
- Develop an appropriate framework to promote the penetration of distributed generation based on renewable energies and the usage of renewable energy in buildings.

### Incentives for Electricity Production from Renewable Energy Sources

#### Incentives for RES within the Law 5346 – Subsidized Prices

The prices within the next table will be applied to Renewable Energy Resource (RER) generation license holders who are within the RER support mechanism and have been or will be

in operation between the dates 18/5/2005 and 31/12/2015 according to the renewable energy source they use to produce energy. The dates are extended in 2016.

**Table 4: Incentives for RES based power generation**

RES Based Production Facility Type	Applicable Tariff USA \$ cents/kWh
Hydro power plant	7,3
Wind energy based power plant	7,3
Geothermal energy based power plant	10,5
Biomass energy based power plant	13,3
Solar energy based power plant	13,3

In order to benefit from the RER support mechanism for the following year, RER Generation Certificate is needed prior to application to Energy Market Regulation Authority (EMRA) by 31<sup>st</sup> of October.

The time periods envisaged within the RER support mechanism starts from the first day of operation for those already in operation and the first day of production for those who are not yet in operation.

Those benefiting from RER support mechanism, may not leave the program within the first year.

Possible to sell power in the free market, but these sales cannot be included in calculations. In the event of using local mechanical and/or electromechanical products in the assembly of the production facilities by licensees in respect of RE Law and put into operation before the date of 31/12/2015; an additional amount changing from 0,4 to 2,4 USD cents/kWh will be paid for electricity produced for five years from the beginning of the operations.

## Laws and regulations

**Energy Efficiency Law** No. 5627 [16] was published on 02 May 2007 for the purpose of increasing efficiency in the use of energy and energy resources in order to efficiently use energy, prevent extravagance, alleviate the burden of energy costs on the economy and protect the environment.

The Law covers the principles and procedures applicable to increasing and supporting energy efficiency, developing a public awareness about energy and to the use of renewable energy resources in the energy generation, transmission, distribution and consumption stages, at industrial facilities, buildings, electricity generation facilities, transmission and distribution grids, and in transportation.

The EE Law provides legal basis for:

- Establishment of administrative structure
- Mandate and authority of EIE
- Requirements and responsibilities for the Energy Management
- Training and awareness
- Energy performance of buildings
- Minimum energy efficiency requirements
- Subsidies and support provided for promotion of EE
- Monitoring

- Fines and penalties for non-compliance

Measures intended to ensure efficient and effective use of energy at public agencies and institutions have been established through the Prime Ministry Circular No. 2008/2. The Circular has started a **National Energy Efficiency Movement**, declared the year 2008 as Energy Efficiency Year and served a Joint Movement Declaration to signature.

As part of the efforts relating to Energy Efficiency, the Ministry of Energy and Natural Resources and the Ministry of Industry and Trade, Ministry of Justice and Ministry of Education have signed cooperation protocols involving joint action plans for the purpose of ensuring efficient and effective use of energy resources and energy, preventing extravagance, alleviating the burden of energy costs on the economy and protecting the environment. Within the framework of the cooperation plan and the action plan executed with the Ministry of Industry and Trade, efforts have been started for supporting SMEs regarding Energy Efficiency in industry. Small and medium sized enterprises (SMEs) are targeted.

Under the provisions of **Energy Efficiency Law**, (numbered 5627 dated May 2, 2007), the Ministry of Industry and Trade has enforced the regulation on "Eco Design of Energy Related Products" by issuing O.G. dated October 7, 2010 covering refrigerators, lamps and electric motors.

A transformation has begun in 2007 and 2008 with the enforcement of Energy Efficiency Law (EEL) and its secondary legislation to turn Turkey to a country of low energy intensity country [17].

#### Awareness Campaign & National EE Movement

- 2008 -Energy Efficiency Year
- Implementation of action plans by provinces
- Joint actions to increase public awareness on;
  - electric motor systems
  - thermalinsulation of buildings
  - tourism sector
  - shopping centers
  - household appliances and lamps
- Improving of EE in public facilities
- Developing cooperation with public and private organizations
- Contests, seminars, symposium, conferences etc. Energy
- Efficiency Week&National EE Forum(2. Week of January)

#### Works Relating to Energy Efficiency in Buildings

The By-law on **Energy Efficiency in Buildings**, published by the Ministry of Public Works and Settlement, provides that permits shall not be issued for the new buildings which do not satisfy the standards and minimum performance criteria regarding architecture, heat isolation, heating and cooling systems and electrification and that the practice of Energy Identity Certificate shall be introduced for buildings. Furthermore, some banks have started to provide loans with attractive conditions to expand the application of heat isolation in existing buildings.

The **TS 825 standard**, establishing the rules of heat isolation in buildings, has been revised and made compulsory as from 14 June 2000. Thus, it is possible to reduce the annual heat losses from building envelopes in the newly constructed buildings by one half. In line with the revised TS 825 Standard, the Regulation on Heat Isolation in Buildings has been amended and put into force in June 2000.

## 2.5.2 Electric Mobility

### 2.5.2.1 United Kingdom

There is no single Government Department in the UK that has responsibility for electric mobility; instead there is a cross-Departmental organisation – The Office for Low Emission Vehicles (OLEV). This is resourced by the Department for Transport, the Department for Business, Innovation and Skills and the Department for Energy and Climate Change. Its role is to support the early market for ultra- low emission vehicles (ULEVs).

In terms of National directives and policies the UK Government has a decarbonisation agenda that covers specific industries and road transport. A quarter of UK greenhouse gas emissions is produced by transport and OLEV's role is to help promote public transport choices to move the UK to cleaner, low carbon vehicle use.

The focus on next generation technologies for ULEVs was picked up by OLEV in 2015 in its report “ A fuel roadmap for the UK” – detailing how carbon emission-free urban logistics will have to be in place by 2030, followed by the complete phasing out of conventionally fuelled cars in cities before 2050. An overarching aim is that by 2040 every new car and van sold in the UK will be an ULEV.

### 2.5.2.2 Spain

This aspect has already been highlighted as a result of the submission of the D3.9 deliverable. As a summary, it should be point out the following regulations and policies on mobility:

- The antecedents of the electric mobility regulations and policies comes on the heels of The Integral Strategy to Promote Electric Vehicle in Spain (Estrategia integral de Impulso al Vehículo Eléctrico 2010-2014) which set up the starting requirements on electric mobility and led to the strategy 2014-2020;
- The national strategy to boost Alternative Energy Vehicle (SEE) 2014-2020 which envisages an action Framework for the implementation of the infrastructure needed by the alternative energy vehicles. The strategy is structured in three lines of action, connected through a framework of stable regulation, particularly with regard to taxation: boost the industrialization of vehicles VEA and the points associated supply, promote an infrastructure network covering the mobility needs of users and measures to boost demand until a sufficient market to boost economies of scale and supply.
- The creation of the Institute for Diversification and Energy Savings (IDAE) a public body attached to the State of Energy Secretariat of the Spanish Ministry of Industry, Energy and Tourism. This Institute works on creating policies to promote the use of new technology in equipment's and projects in order to encourage “the use of new energy sources, rationalization of consumption and reduce energy costs.” As mentioned in the deliverable D3.9, IDAE carries out "the allocation and control of any grants and financial incentives for conservation, savings, diversification and energy development. It may also exercise the functions of an agency, mediation or creation of channels for financing companies or entities in general that are adequate to achieve the defined objectives. IDEA creates incentive programs for aiming and promoting the acquisition of electric vehicles.

### 2.5.2.3 Turkey

There is no single Government Body that is responsible for electric mobility, but mobility is covered in the national and regional strategic plans which were already mentioned in Section 2.2.5. Turkish national policies and plans cover specific industries and road transport. Almost

25% of Turkey greenhouse gas emissions are related with transport and over 90% of these are related with road transportation. Most of the strategies include policies to increase public transportation, increase the use of railways and seas more for transition to a low carbon transportation system.

Mobility and transportation related policies in National Strategies are;

- In urban transport, coordination between institutions will be strengthened, more efficient planning and management will be ensured, and integration of urban transport infrastructure with other infrastructures will be enhanced. Investments and practices in alternative transport options such as pedestrian and cycling will be incentivized [20].
- The existing and planned urban rail transit system projects of metropolitan municipalities will be designed so as to integrate to main railway network, urban logistics centres, intercity bus terminals, airports and other transport modes.
- In urban transport, information technologies and intelligent transport systems will be efficiently utilized in traffic management and public transport services.
- Use of ICT will be considered important in order to increase public contentment, quality and efficiency in establishment and service provision of urban infrastructure systems.

### National Climate Change Action Plan – NCCAP-İDEP (2011-2023)

Mobility and transportation objectives and planned actions in the strategic plan are:

- Increasing the share of railroads in freight transportation (which was 5% in 2009) to 15% and in passenger transportation (which was 2% in 2009) to 10% by 2023
- Increasing the share of seaways in cabotage freight transportation (which was 2.66% in ton-km in 2009) to 10%, and in passenger transportation (which was 0.37% in passenger-km in 2009) to 4% as of 2023
- Decreasing the share of highways in freight transportation (which was 80.63% in ton-km in 2009) below 60%, and in passenger transport (which was 89.59 in passenger-km in 2009) to 72% as of 2023
- Develop an intermodal transport system and ensuring balanced utilization of transport modes in freight and passenger transport
- Restructure urban transportation in line with sustainable transport principles
- Disseminate information on the use of alternative fuels and clean vehicle technologies in the transport sector
- Increase efficiency in energy consumption of transportation sector
- Develop the information infrastructure in the transport sector
- Development and improvement of bicycle and pedestrian transport
- Encouraging use of clean fuel and clean vehicle technologies by private automobile users and commercial fleets in urban transportation

### Energy Efficiency Strategy Paper 2012-2023

- To reduce unit fuel consumption of vehicles, increase percentage of public transportation in road, marine and railway transportation and prevent the fuel waste in urban transportation
- The **By-law on Principles and Procedures Regarding Energy Efficiency in Transportation** was published on 9 June 2008. Practices intended for reducing the unit fuel consumption of domestically produced transport vehicles, increasing efficiency standards in vehicles, expanding the use of public transportation vehicles and establishment of advanced traffic signalization systems have been launched under the regulation issued by the Ministry of Transport and Communication.



## 2.5.3 Integrated Infrastructures

### 2.5.3.1 Overview

There is a clear lack of up to date governance, in all cities, with regard to the advances that have been made in the field of ICT and the use of the information and data that is a product of its use. Apart from legislation and directives around the use of personal data there is a gap in any underpinning, in a regulatory means, of common data sets, platforms and integration.

The excellent examples in this chapter outline the challenges and opportunities that coexist with ICT and integrated infrastructure in Turkey and Spain.

### 2.5.3.2 Challenges and opportunities in Spain

As for the current ICT situation in the city of Valladolid, it deserves to be mentioned the initiative **S2CITY - Intelligent System for Citizen Services and Tourist**, although pending of approval from RED.ES, the initiative want to put the city on the forefront of services with massive use of ICT

The initiative proposes the creation of a unique access to public services through the citizen card and / or mobile device. Nonetheless, the initiative foresees the coexistence with other physical devices - the citizen and tourist card - for collectives who have not yet taken the step towards Smartphones.

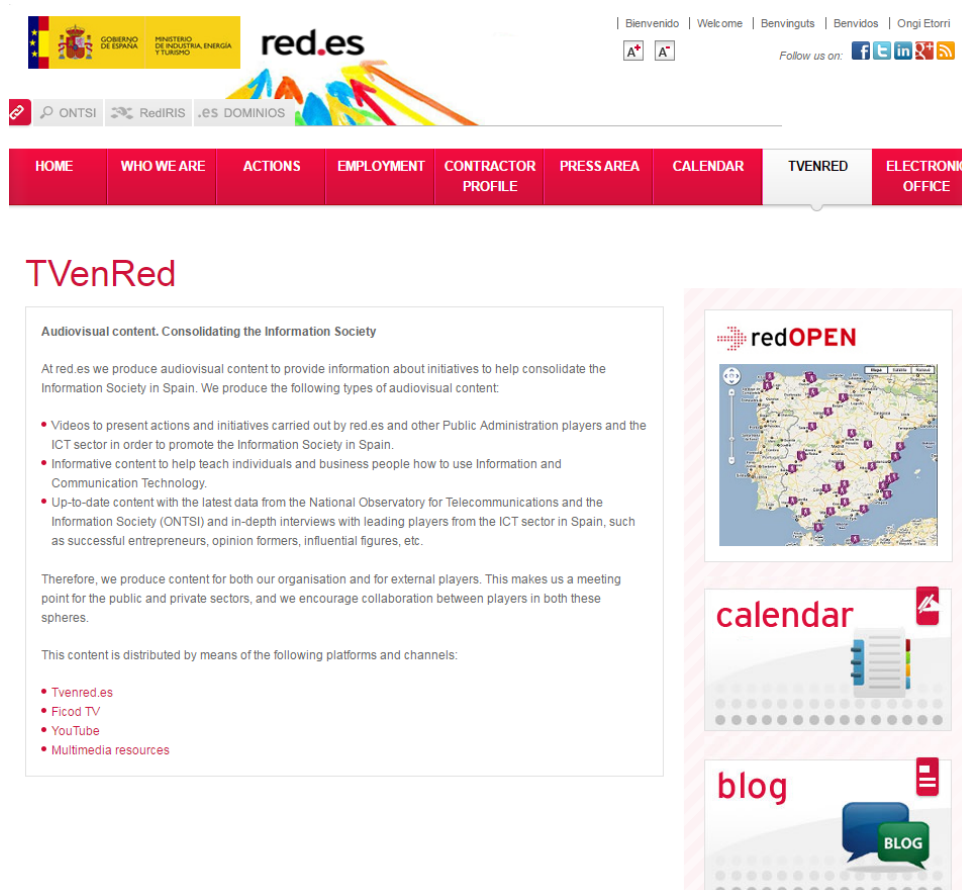


Figure 3: National directives and policies – ICT in Spain

Services Access will be unified under a unique intelligent system that will generate a database of information. This system will also be fed by information taken from other applications such as traffic control system. With appropriate techniques and technologies of business intelligence



and big data indicators and even predictions, the information obtained will give some keys on what is happening in the city.

The initiative proposes an information entry to the Intelligent System for citizens and tourists services from unstructured sources as well as social networks, websites and other applications, getting at the end an "active listening" of citizen.

The existing **Citizen Participation Portal**, will be expand to an **Open Data portal** with all those datasets that the Intelligent System can generate as open data. Information on how citizens interact with the city has to arrive- in an accurate manner- to the citizens, entrepreneurs and businesses. The goal is to create new services, applications, studies, or other initiatives, based on technological innovation, economy data, etc...

Gamification techniques are going to be applied to make Valladolid *environmentally speaking* a more sustainable city. Interactions with public services such as the use of urban public transport, bicycle, electric car, etc... give the possibility to obtain points which will be transferred to a "serious game". Other behaviour will be added in order to obtain additional points as *walking to work, taking the stairs in public buildings* instead of taking the elevator, *moving around the city by bike*, amongst others. These points earned in the game get exchangeable bonds in certain shops attached to the commercial platform "Valladolid de Tienda en Tienda" - Valladolid shop to shop- and tickets for museums and theatres of the city.

### 2.5.3.3 Challenges and opportunities in Turkey

The 10<sup>th</sup> Development Plan states that the use of smart applications will be broadened especially in the areas of health, transportation, building, energy and disaster and water management. (Article 731). The transformation to smart cities will be supported by increasing the infrastructure, capacity and skills of cities about Information and Communication Technologies.

In relation with the 10<sup>th</sup> Development Plan the Information Technology and Communications Authority developed its strategic plan 2016-2018. There is no action planned for the transformation of smart cities.

There is also a National E-Government Strategy and Action Plan published in the first quarter of 2016. The plan does not cover the area of energy related interventions or smart city transformation.

## 2.6 Regional Directives and Policies

### 2.6.1 Low Energy Districts

#### 2.6.1.1 Nottingham

In 2010 Nottingham City Council agreed and signed up to the Nottingham 2020 Sustainable Energy Strategy. This provides an overarching framework for the City's plans, programmes and initiatives relating to sustainable energy supply and use to 2020: cutting emissions, maintaining energy security, maximising economic opportunities and protecting the most vulnerable households. The Strategy and the associated action plan will ensure that Nottingham accelerates the development, use and value of its energy resource and energy efficiency potential.

The Action Plan priorities the delivery of:

- A 26% reduction of carbon dioxide emissions against 2005 levels.

- 20% of the City's own energy generated from low or zero carbon sources by the target date of 2020, as set out in the Local Sustainable Community Strategy.

Additionally, the National Government's Low Carbon Transition Plan and Renewable Energy Strategy, in particular provides very challenging targets. The Nottingham 2020 Sustainable Energy Strategy details how the city will meet its proportional "pro rate per capita" contribution to the national Renewable Energy Strategy targets, which is estimated in the City at:

- 2% (375GWh) generation from small scale sources
- 12% (342.7GWh) generation from renewable heat sources

In the Nottingham City Council Plan 2011 to 2015 and the Nottingham Housing Plan, targets were included to insulate over 50% of outstanding lofts and cavity walls in private rented homes and to double solid Wall insulation across all sectors. The new Nottingham Plan to 2020 (The Sustainable Community Strategy)[32] now calls for the following:

- Tackle fuel poverty by setting up a not-for profit energy company to sell energy at the lowest possible price to Nottingham people,
- Maximise Government and energy company grants to continue our programme of insulating homes in those areas that are hardest hit by rising fuel prices, whether they are owner occupiers or tenants
- Reduce domestic energy use by 10% by seeking funding for further insulation and more efficient boilers,
- Double the number of council houses with solar panels installed from 3,000 to 6,000.
- Reduce the city's carbon emissions by 26% of 2005 levels (although the target has not been met, latest data shows Nottingham has the lowest CO2 emissions of all Core Cities)

Nottingham is starting the low carbon transition from a strong base. Between 2003 and 2006 the City reduced domestic gas consumption by 16%. In 2006 Nottingham generated 3% of its own heat and power from renewables and waste, making Nottingham the most energy self-sufficient City in the UK.

It also generated 11.45% of its own heat and power from gas CHP (combined heat and power) and renewables.

The national and local targets for heat and power will be challenging to achieve and will require the development of all the City's major renewable and low carbon energy resources from large scale biomass to a rapid increase in the uptake of domestic renewable energy systems. National targets for small scale electricity generation and renewable heat steer Nottingham towards biomass fuels and renewable electricity generation.

In particular, to meet national and local targets for heat and power Nottingham will need to:

- More than double the size of the City district heating network
- Develop a local biomass processing and transfer site
- Increase significantly the capacity of new biomass CHP plant with associated district heating, and
- Consider the installation of a City anaerobic digester.

Nottingham also has a positive track record with area based retrofit and in recent years particularly in improving solid wall properties. Programmes have usually been area based due to the funding availability.

Since 2013, NCC and NCH have insulated more than 3500 solid wall homes, through area based neighbourhood projects. NCC's Green Deal Communities project was managed by Nottingham City Homes, enabling NCH to deliver cross tenure to private residents as well as tenants. This meant that a full procurement exercise had already taken place, which local



residents were able to benefit from. This funding resulted in neighbourhoods in which significant numbers of homes have received solid wall insulation – in one estate in Nottingham more than 2500 homes were insulated in the last two years.

Nottingham has also seen significant success with installation of PV solar systems. NCC and NCH used the FIT scheme to fit PV onto domestic roofs in deprived areas, with the electricity going to the householder for free to reduce their bills, and the FIT going to NCC/NCH to enable us to pay for the investment. We have approximately 3600 completed registrations and these stats show 5109 in Nottingham – so at least 70% of the FITs in Nottingham are targeting the fuel poor. The table below shows that Nottingham has installed more PV per 10,000 homes than any other Core City:

## FEED IN TARIFFS: SUB-NATIONAL STATISTICS

**Table 1. Cumulative installations confirmed on the Central Feed-in Tariff Register by Region<sup>1</sup>**  
2016

Region	Estimated number of households <sup>3</sup>	Q1 (as at end March)		Installations / 10,000 households Photovoltaics
		Cum. installations Photovoltaics		
		Domestic	Total	
East Midlands	1,943,621	73,249	75,445	377
East of England	2,503,597	88,863	91,614	355
London	3,435,376	19,043	20,123	55
North East	1,147,092	40,373	42,142	352
North West	3,069,015	74,129	75,941	242
South East	3,668,287	94,577	97,442	258
South West	2,329,973	104,253	108,224	447
West Midlands	2,349,436	58,054	61,219	247
Yorkshire and The Humber	2,271,680	71,632	73,848	315
<b>Total for England</b>	<b>22,718,077</b>	<b>624,173</b>	<b>645,998</b>	<b>275</b>
Scotland	2,419,921	49,211	50,647	203
Wales	1,326,440	47,636	49,372	359
<i>Unallocated<sup>4</sup></i>	-	1,539	2,081	
<b>Total</b>	<b>26,464,438</b>	<b>722,559</b>	<b>748,098</b>	

### Notes:

1. Data are sourced from the Central Feed-in Tariff Register (CFR) maintained by Ofgem as extracted on 15th April 2016. The

**Figure 4: Cumulative installations confirmed on the Central Feed-in Tariff Register by Region**

### 2.6.1.2 Valladolid

Energy efficiency plans in public buildings of the Autonomous Communities (Regional Governments) and Local Governments are pioneers in the procurement of energy service companies and in the use of energy performance contracts and public-private collaboration to finance measures adopted by the autonomous communities. All of Spain's autonomous communities are implementing energy efficiency plans in their public buildings considered thus as a good way to extend this practice to Districts and homeowners.

In the case of public buildings, plans have been structured in the following three main groups:

- The adoption of an energy efficiency plan as an exemplary role of public buildings;
- The implementation of an energy management system which includes energy audits and;
- The use of energy service companies and energy performance contracts to finance renovations and to implement plans for maintaining or improving long-term energy efficiency.

The main measures in place within Castile-León Region are The Castile-León energy plan for 2020: In the case of public administrations, this plan is focus on optimizing electricity and natural gas supplies; performing energy audits and implementing savings measures, directly or through energy service contracts, and promoting this approach in local governments as the case for Valladolid City Council implementing pilot projects on exterior public lighting; setting up a line of financing for energy efficiency projects through the region's economic development agency (ADE), and implementing energy management systems which include metering, control and monitoring in government branches.

As far as the interventions in building concerns, it is necessary to fall back on the Spanish Technical Building Code used to design the interventions in building retrofitting when the intervention covers more than 25 % of the total envelope surface. This legislation includes a Basic document of energy efficiency (as introduced in the above point) that delimits the energy performance of the building envelopes depending of each Spanish climate characteristics and locations and the use of the building (residential or non-residential).

Concerning Photovoltaic systems, they must comply with certain technical characteristics pointed out in the Spanish legislation. As electrical components, BIPV modules are subject to the applicable electro-technical requirements as stated in the Low Voltage Directive 2006/95/EC.

Being a part of the envelope, important characteristics for BIPV systems are established in the Spanish Technical Building Code (TBC). The TBC also imposes the minimum contribution of PV energy sources of some buildings depending on its characteristics and nature, but not for residential ones.

The RD 1699/2011, in which the grid connection of low power installations is regulated, follows the guidelines set by Directive 2004/8/CE promoting small installations in order to enhance the energy efficiency and security of supply, as well as Directive 2009/28/CE that encourages the use of renewable energy sources. This RD repealed RD 1663/2000, for the connection of photovoltaic systems to the Low Voltage grid. This Royal Decree sets the basis that PV installations must fulfil in order to carry out the grid connection.

RD 1699/2011 of 18 November is the decree which the grid connection of low power installations is regulated This Royal Decree includes the previewed simplifications of Directives 2004/8/CE relative to cogeneration and Directive 2009/28/CE promoting the use of renewable energy sources. It establishes administrative, contractual, economic and technical conditions for the distribution grid connection of small power installations.

Concerning the current status of Photovoltaic, we can say that Castilla y León is one of the autonomous regions with more photovoltaic production of Spain, with 839 GWh per year but government reforms, including the "tax sun" have paralyzed the sector, despite significant reduction in the cost of photovoltaics in recent years.

The photovoltaic industry of Castilla y León has seen how the installation of new capacity connected to the state power grid has dropped dramatically in recent years (Only 3 MW photovoltaic were installed in Castilla y León in 2014). This trend was repeated throughout Spain.

Legal uncertainty generated by the Spanish Government with the policy changes are the cause of the artificial paralysis of one of the technology sectors most developed in the world in 2014.

Global data also reflect the contrast between the international commitment to the development of photovoltaics and the slowdown in Spain. The threat of an unfavourable development of the electricity consumption regulation has slowed the development of this saving option and energy efficiency, which is already profitable in this country.

The RD, which regulate the own consumption (known as "tax the sun"), has led to the rejection of citizens, political parties and social agents of this kind of efficient energy measure arguing that "it is not justified the restrictions on this source of energy. Citizens should be allowed to install photovoltaic panels as an energy saving measure, without paying toll for the energy produced and consumed at the facility itself «as requested by The Spanish Photovoltaic Union (UNEF- Trade Association of solar photovoltaic energy in Spain).

### 2.6.1.3 Tepebasi

The Ministry has set an Integrated Urban Development Strategy and Action Plan (Kentges) with the strategic vision on planning, environment and world class cities for the period 2010 - 2023. It was prepared as a road map, establishing strategies and actions for solutions of the problems regarding urbanization, settlements and planning and as a reference framework document at the national level. In order to attain this vision, a series of action plans, laws and regulations were enacted. Several of the most recent developments have been summarized below;

#### **Kentges - Urban Development Strategy and Action Plan [18]**

Kentges, being a major strategy document for the development of settlements in Turkey, covers different aspects of settlements, urbanisation and spatial planning in an integrated manner for the period of 2010- 2023.

Kentges has determined main working areas as follows:

- Urban transformation projects
- Regional planning and urban design projects
- Investment for public infrastructures and alternative financial solutions
- Renewable energy technologies
- Climate change and controlling greenhouse gas emission
- Earth, water pollution and control
- Water treatment technologies

The document has 3 main axes for its strategies. These are;

**Axis 1:** Reconfiguration of spatial planning system.

**Axis 2:** Increasing the quality of life and physical quality of the settlements

**Axis 3:** Strengthen the economic and social structure of settlements.

Many of the domains that have been elaborated in KENTGES cover areas that are of relevance to the three pillars of the REMOURBAN model. Some of the more important strategic action domains in KENTGES has been highlighted.

- Enabling sustainable and diversified land and house production and supply.

Municipalities also prepare **strategic plans** for the formation of their services in future. Cities with a population greater than 50.000 have to prepare strategic plans. Ministry of Environment and Urbanism have a binding role between different actors of urbanization for the creation of an environment suitable for smart solutions. Creating a vision for strategic development is an important step for this binding process. Ministry of Environment and Urbanism is the guiding authority on spatial planning, urban transformation, environmental management, and environmental protection. It defines and regulates strategies, policies, procedures, and guidelines. Ministry as a regulatory authority, is not however a spokesman of one certain definition of the city vision such as; Smart City, Knowledge City, Green Economy, Sustainable Development, Green Growth, Green Planning, Ubiquitous City, etc. Instead of initiating one approach, ministry trying to set standards, prepare regulations, initiate data warehouses like a

GIS centre, prepare strategic action plans for the long term and collaborate with other central governmental bodies.

The **Environmental Order Plans** clarify land-use decisions related with housing, commerce, industry, agriculture, tourism, and transportation in the scale of regional and national level. The Environmental Order Plans are executed in the scales of 1/50.000 and 1/100.000.

The **Construction and Development Plans** can be examined under 2 plan type called Master (Nazım) Plans and Construction Application Plans. Master (Nazım) Plans are prepared in the scale of 1/25.000 and 1/5.000. Construction Application Plans are prepared in the scale of 1/1.000 for every urban settlement with a population over 2000.

### Strategic Plan of Tepebaşı

One of the strategic aim of Tepebaşı Municipality is implementing actions to combat climate change. As a starting point the Municipality have signed

#### Sustainable Energy Action Plan Tepebaşı [19]

Tepebaşı Municipality is a signatory of the Covenant of Mayors Initiative and have prepared a Sustainable Energy Action Plan at the end of 2014. The overall target of the plan is to decrease the energy consumption and greenhouse gas emissions by 23% in 2020 compared to 2010.

Change the fuel type in the residential buildings from coal to natural gas. Save 25 % energy at least in 25 % of the buildings by insulation and change of electrical appliances with more efficient ones.

As explained in D1.13 Report on non-technical barriers in the section on Urban Transformation Policies and intervention of central government in Turkey, there will be urban transformation projects within the district of Tepebaşı. Around 10.000 dwellings will be built again with an additional 6.000 dwellings added to stock. All of the buildings will be built taking into account energy efficiency measures.

There are also targets related with renewables. In line with national targets the Municipality is expecting to increase solar energy production to 30,000 MWh a year. The local government is planning to increase the awareness and knowledge of citizens about how to implement renewable energy to their homes by establishing “information kiosks”. The citizens will also be informed about low energy appliances that can be used at home, business, etc.

## 2.6.2 Electric Mobility

### 2.6.2.1 Nottingham

Nottingham is on a journey to become a world class city. To achieve this, the Leader of Nottingham City Council has committed to embrace fully low carbon transport options and is aiming to make Nottingham the exemplar low carbon city.

To help achieve this Nottingham City Council is aiming to use its Local Transport Planning Authority powers to make it easier to use an electric vehicle. This will require an investment in electric charging and other infrastructure, to take more brave planning permissions in creating a low-emission zone in the city centre – restricting access to fossil fuel powered vehicles.

Transport plans and planning decisions are taken at a city level with the authority vested in the Local Authority. Nottingham City Council was the first city, outside of London, to take the decision to introduce the Workplace Parking Levy in 2012. The revenue raised from this local taxation, on workplace parking spaces for companies with over 11 eligible parking places, is ring-fenced for transport investment and has been used to lever in additional funding to extend

the tram network, create stand-alone cycle lanes, improve the ring road on the outskirts of the city and extend the electric bus fleet.

The next step in Nottingham City Council's commitment to ULEVs is to continue the electrification and decarbonisation of the City's transport infrastructure. In future the trams, trains and buses will be powered by electricity sustainably generated from local sources while locally and nationally we experience the shift towards the greater use of ULEVs on our roads.

There is now a better understanding of the risks to public health of poor air quality – with 70% of all air pollution in urban areas being directly linked to road transport - it is clear that tackling air quality is a key issue in delivering public health benefits and enhancing the liveability of the City.

Nottingham has the lowest CO2 emissions of all of England's large cities and has achieved the highest reduction in comparison to most cities outside of London. The City's emissions have fallen by 21% since 2005. This reduction being achieved, in part, by proactive measures to increase the take-up of public transport options – for example, investing in the introduction of Europe's largest fleet of electric buses.

Nottingham City Council has, therefore, set itself a new target of both reducing its carbon emissions by a further 5% by 2020 and improving its air quality. Central to this commitment is the continued electrification of the City's public transportation system and measures to increase the use of ULEVs.

### 2.6.2.2 Valladolid

As far as the municipality of Valladolid concerns, in 2010, through a pilot project, a network of charging points was created for public use of EV. This led to design a Municipal Strategy to promote Electric Mobility from 2012 to 2015, in particular with the creation of the EV Office and specific services associated with these infrastructures: charge card free, free parking.

In 2011 Valladolid signed The Covenant of Mayors and its Action Plan for Sustainable Energy (PAES), In June 2012 Valladolid became a founding member of the Spanish Network of Smart Cities (RECI) composed by 62 municipalities. RECI's head office is in Valladolid and also the city leads the mobility working group whose Normalization Technical Committee establishes a forum of cities that drives electric mobility to define a strategy plan of technical standards that promote Smart Cities in Spain.

As mentioned on other deliverables, the new Clean Vehicle Program (PVL) adopted in December 2014 by the Municipality was a definitive step as positive action to implement both EV as well as efficient energy-vehicles, to anticipate measures like the installation of infrastructures for recharging EV, undertaken next by the national Government (under RD 1053/2014, of 12 December, which approves the ITC-BT 52 "Facilities for special purposes: Infrastructure for recharging EV ") and new instructions provided by an European Directive 2014/94 / EU on alternative fuels. The PVL is integrated into the new Sustainable Urban Mobility Plan of the city.

This plan called PIMUSSVA is an important strategy which objective is to establish the principles and targets of urban mobility in Valladolid and regulate the planning tools.

The main objectives are:

- To integrate the urban deployment policies with the mobility policies
- To regulate the accessibility in the city and its environment.
- To promote the rational use of the private vehicle
- To improve the mobility in general, and to reduce – in particular – the needs of mobility with private vehicle.
- To plan a new model of mobility for prioritizing the public transport

- To decrease the traffic congestion in the downtown
- To boost and protect the more ecological means of transport
- To create initiatives for improving the security in the mobility
- To use new technologies for improving the urban mobility.
- To promote measures for protecting the environment.

Regarding the current and most recent situation as a result of the REMOURBAN project, it must be noted that the mobility strategy means to reach 63 in 2020 from the 34 existing public charging points, which will draw a large network of public use that will support recharging in homes and car fleet, a real management and monitoring of the charging infrastructure and fleets, the development of a Car-sharing platform for Valladolid City Council fleet following the requirements pointed out in Valladolid City Council's Shared Vehicle Strategy Agenda, Last-mile strategy to optimize the movement of delivery vehicles in the City Centre, Smartphone apps development devoted to:

- Foster usage of mobility interventions to be deployed including Car-sharing solution for Valladolid City Hall corporate fleet
- Provide a value-added solution for the case of last-mile logistics
- Collect feedback from involved users (citizens and drivers of the different fleets)

### 2.6.2.3 Tepebasi

The Integrated Urban Development Strategy and Action Plan (Kentges) set by the Ministry also covers the area of mobility. The axes related with mobility can be summarised as below:

#### Kentges Axis 1 Actions Impinging on the Sustainable Mobility Domain

Smart mobility can be defined as providing transportation needs of citizens and commodities while supporting economy and environmental. Integrated ICT solutions can be used for the support and management of facilities and enables mixed modal access. Emergency call centers and emergency action centers with their ICT infrastructures and transportation systems are strategic actions of Kentges. Increasing service quality of public transportation systems and improvement of technological background are other actions. Smart mobility supports sustainability. In the Turkish context, public transportation will be environmentally friendly by the help of technological improvements. Urban transformation and traffic systems will be improved with ICT based investments and regulations. Transportation systems and core transportation facilities will be prepared for disaster scenarios. The table below summarizes actions related to the mobility area.

**Target:** *Creating sustainable urban transformation system*

**Actions 1:** Urban transportation plans will be prepared and implemented according to environmental, technical, economic and social variables.

**Target:** *Integrity of pedestrian and vehicle traffic will be taken into account.*

**Action 1:** Quality and level of technology will be increased in public transportation systems.

**Action 2:** Public transportation system will be environmentally sensitive.

**Action 3:** Information technologies will be used extensively in urban transportation.

#### **Strategic Plan of Eskişehir**

Eskişehir Metropolitan Municipality has prepared its strategic plan 2015-2019 after 2014 elections. One of the Strategic Aims of the plan is to have a city-friendly transportation system. Eskişehir is one of the few cities in Turkey that pedestrians feel safe and comfortable. The city



governance believes the transportation needs should be met by public transportation instead of individual cars.

1. Target: The light rail system will be improved to be sustainable.
2. Target: The ratio of public transportation within the total transportation system will be increased.
3. Target: Transportation through Porsuk River will be maximised especially for touristic purposes.
4. Target: Traffic optimization system will be enhanced.

### **Sustainable Energy Action Plan Tepebaşı**

The Metropolitan Municipality of Eskişehir is responsible about the public transportation system covering the Tepebaşı district. Tepebaşı can only support the Metropolitan Municipality's plans by developing policies to help change its residents' transportation habits and use public transportation more often. There are limited tools for Tepebaşı. The Municipality has planned to have showcases such as changing the municipality fleet with hybrid and electric cars, uses electric buses for free of charge to the habitants (like shuttle services to some Municipality owned service buildings, etc...). All these interventions are included in the SEEP of the Tepebaşı Municipality.

## **2.6.3 Integrated Infrastructures – ICTs**

### **2.6.3.1 Tepebasi**

The Integrated Urban Development Strategy and Action Plan (Kentges) set by the Ministry also covers the area of ICT. The axes related with ICT can be summarised as below:

#### Kentges Axis 1: Actions Impinging on Integrated Infrastructures and the utilization of ICT Technologies

Smart governance can be explained as the use of different policies, models and technologies for the implementation of effective service provision. Smart government focuses on Improving public services and processes. ICT supported e-government services and open data sources creates new channels between governmental organizations and citizens. Coordination of different public sector organizations and making them work collaboratively by the help of ICT are major success indicators. A coordination centre was planned to be founded between police, municipal police forces and other organizations. Regulations will be prepared for establishing and operations Urban Information Systems. National Geographical Information Systems and physical Planning Portal will be established, Digital Database and Tracking Centre will be founded to support spatial planning. A summary of KENTGES Axis 1 Strategies related to smart governance can be seen below.

- Maintaining conformity and coordination system between institutions that generate or use data in nationwide by establishing effective information.  
Educational programs and cultural activities related with urban rights and sense of belonging

## 3 Barriers of regulation, incentives, planning and other policies around retrofits and area regeneration

### 3.1 Barriers in Turkey

Turkey has historically and traditionally been a strongly centrally governed state [21]. Following the increased importance of urbanization and responsibilities regarding local administrative authority, several moves have taken place to include distribution of administrative power. The Turkish Constitution includes in the Article 123, Paragraph 2, reference to "...the principle of governance from local in addition form central authority..." which gives local power constitutional substance. On the other hand, secondary legislation and practice itself cannot be interpreted to realize any of this substance neither in organizational form nor their daily practice.

Historical developments and Turkish candidacy to the EU however, can be said to have overhauled significantly this situation. An added impetus has come as World Bank and IMF requirements regarding deregulation and reforms at both central and local government levels. The following evaluations have greatly benefited from World Bank/IMF and EU analysis of the Turkish Administrative Reform Processes.

#### **Power Shifts; Problems related to Local Power Sharing**

Public procurement reform is but one dimension of the more important shift of power between central and local government in Turkey. Developments in this direction are critical in a more locally controlled public procurement structure. Several major local government reforms were carried out during the last decades in Turkey [22]. The Government had initially declared strong will on implementing further reforms to strengthen the local administration system in Turkey. Such will finds its expression in a number of national policy documents and action plans. Within the scope of the Local Administration Reform (LAR) entrusted with the Ministry of Interior (MoI), core pillars of the ongoing overall reform process were addressed in the country by strengthening the local administration system as a whole and improving the institutional capacities of local authorities and individual capacities of relevant staff. These projects have been designed and implemented to strengthen the basis and human and institutional capacities for citizen-centred local administration with an increased responsiveness to the expectations and immediate needs of local communities.

Despite successful implementation of the LAR Packages and follow-up projects which complemented realization of reforms in the field, challenges remain particularly with regards to the need for comprehensive information and understanding of the changes borne due to emerging institutional and operational capacities required for full implementation of restructured local governments. Challenges also include implementation of an important number of novelties introduced by the Government and the Parliament, such as;

- full compliance with strategic planning,
- multi-annual budgeting,
- compliance of standards and performance indicators for public services,
- establishment of effective internal control systems (mostly based on ex-post audits),
- citizens further participation in local decision making processes and management of initiatives aimed at addressing immediate needs of relevant local communities.

In addition to these challenges, the action would also address the administrative and operational capacities for efficient local service delivery, ensuring effective, inclusive, accountable and participatory local governance in line with the new reforms introduced in the field, particularly the new Metropolitan Municipality Law No: 6360.

It should also be acknowledged that the long-term sustainability of the efforts and the progress achieved depend to a great extent on the development of a consistent and comprehensive support strategy. In the medium-term, the role of the central administration vis-a-vis the local administration will undergo a profound transformation: tutelage and command-and control systems will be replaced by the capacity to co-ordinate and lead the development of additional reform policies and instruments, to establish appropriate and flexible regulatory frameworks for local administrations and to maintain and manage instruments of cooperation between central government and the local administrations. The mandate, organization, management culture and practice, technical resources and human resources capacities of the central administration units responsible for local administration will be reviewed and adjusted to the current framework.

In 2008 Turkish National Programme for the Adoption of the Acquis related to the EU, the Political Criteria Section's Article 1 states that the Functionality of Public Administration refers to achievement of a transparent and effective administrative system and adoption of Law on General Administrative Procedures. In this context the Law on Administrative Legal Procedures is to be amended. The National Programme ensures effective implementation of the legislation regarding the restructuring of the central administration and transferring authority to the local administrations, adopted earlier.

In this framework, "**Municipality Law**", "**Metropolitan Municipality Law**", "**Law on Special Provincial Administration**", "**Law on Local Authority Associations**", and "**Law on Share Given to Special Provincial Administration and Municipalities from General Budget Tax Revenues**" have already been enacted. Besides the prospective good governance related benefits which are expected to be achieved, this action is directly relevant to the **IPA II Indicative Strategy Paper for Turkey (2014-2020)**. The Paper explicitly mentions the need of an effective, efficient, responsive and service-oriented public administration as condition for good governance, stable economic conditions and ensuring the institutional capacity to implement the EU Acquis". In addition, it is also targeted that LAR process should continue in a way to better address better investment planning and systematic consultation of civil society.

Addressing the challenges identified also in the scope of LAR projects implemented by the MoI and UNDP, the regular reports on progress have direct reference to the need of transparent and accountable local governance structures and devolving adequate powers to local government. The latest progress report in 2014 explicitly mentioned that "*There was no progress in devolving power to local governments. Fiscal decentralization remained very limited*".

Following ratification of the Metropolitan Municipalities (MM) Law No: 6360 on the establishment of 14 MM in 13 provinces and 27 districts and amending certain laws and decree-laws, which was enforced in April 2014 following the local elections, the number of MM increased to 30 with 1053 districts and 16082 villages declared neighbourhoods of the MM. In this framework, the number of Special Provincial Administrations decreased to 51 (elimination of the Special Provincial Administrations of the new MM).

In accordance with the Constitution, the central administration has the power of administrative tutelage over the local administrations, in the framework of principles and procedures set forth by law, with the objective of ensuring the functioning of local services in conformity with the principle of the integral unity of the administration, securing uniform public service, safeguarding the public interest and meeting local needs in an appropriate manner. However, while maintaining tutelage as a constitutional principle, the new Laws adopted in 2004-2005 have introduced a drastic shift in the relationships between central and local administration, to set them in line with the standards and criteria laid down in the European Charter of Local Self-government.

After the signature and ratification by the Turkish Republic of the European Charter of Local Self-governments in 1993 and linking with past reform efforts which failed to materialize due to



social and political developments in the country, several successive governments have been working in the formulation of new policies and legislation aimed at the reform and modernization of the local administration system in Turkey, in the context of broader policies on Public Administration reform (PAR) [23]. However, it was only with the 58th and 59th Governments that the referred reform efforts started to materialize. From the outset, these two governments declared strong will to undertake a process of rationalization, modernization and decentralization of the system of public administration in the country, and, following up from this declaration, new legislation on local administrations was prepared and enacted in the years 2004-2005. The referred legislative “package” consisted of new Laws on:

- Municipalities
- Metropolitan Municipalities
- Special Provincial Administrations
- Unions of Local Authorities

Implementation of all these new legal instruments brought about certain challenges to local administrations and the respective elected representatives and staff, their Unions, and to the central administration bodies responsible for local administration namely the MoI, and Governorships. In order to best tackle with the challenges of referred institutional transformation and reforms a number of projects have been implemented. Those which managed to create substantial impact both at the central and local levels, among others, have been led by UNDP Turkey, namely: Enhancement of the City Councils for Increased Functionality as Local Governance Platforms (2008-2011) and Support to Further Implementation of LAR in Turkey Phase I (2005-2007) and Phase II (2010-2011).

#### **National Sector Strategies:**

IPA II Indicative Strategy Paper for Turkey (2014-2020) targets the improvement of PAR coordination, policy-making, civil service and public administration organization and governance and service delivery to citizens and businesses, including at local level. The new legislation adopted in the past years in the field of local administration, has expanded the scope of the responsibilities of local administrations in the provision of public services, as well as in the promotion of the social and economic development of the relevant communities.

Relevant to the recent developments in the field, the **10th National Development Plan**, put into effect in June 2013, underlines the negative effect of lack of technical and institutional capacities at the local level on quality and efficiency of local service delivery, while reiterating the importance of increasing institutional capacities of the new MM to be established in accordance with the Law No. 6360. The Plan also highlights the importance of deploying participatory tools in local administrations in order to support further reforms on including non-governmental organizations, private sector and unorganized civil society to local decision-making processes. In this vein the 10th National Development Plan focuses on identification of priorities at the local level and efficient use of local resources as it identifies the main beneficiaries of the Plan as local authorities, MM, universities, professional organizations and NGOs. In specific terms, the following objectives for LAR under the Plan are entrusted to the coordination of MoI:

- Increased efficiency in local service delivery
- Strengthened capacities of local administrations in terms of human resources management and strategic planning
- Strengthened capacities of local administrations in terms of project management
- Enhanced inclusion of universities, NGOs and professional organizations in local decision-making processes.

In line with the objectives of the 10th National Development Plan, the **Strategic Plan of the Mol for 2015-2019** [24] identifies the priorities and the core values of the Mol as; the rule of law, respect for human rights, transparency, commitment to ethic values, participation and delivery of efficient and good- quality services. The Strategic Plan highlights the importance of ensuring efficiency, effectiveness, participation, openness and accountability at local administrations as one of its main goals. The Strategic Plan sets five thematic areas and results as;

- Establishing a peaceful environment via strengthening internal security services and coordination in accordance with human rights norms,
- Increasing pace and quality of services provided by local authorities including governorates and district governorates,
- Promoting development of civil society,
- Deployment of information technologies as a facilitator in efficient provision of services,
- Increasing the pace and quality of the services provided by the Ministry.

In the scope of the LAR Phase II, a white paper was developed for the Mol, which outlines the short, medium and long term policy options to be pursued to have a full-fledged LAR in the scope of Turkey's EU Accession process. This action addresses to the short-and medium-term policies those will form the basis of long-term policy options for the Government of Turkey. Besides, the action represents a continuum of the first and second phases of EU-funded LAR projects in the scope of which required legislative framework were improved and put into place through phased approach.

The influence of the EU on the commencement of the second comprehensive public procurement reform has been relatively limited. Although the texts enacted at the end of the reform process contain remarkable similarities with the EU directives on public procurement, the dominant actors have been the IMF and the World Bank, as the reforms were stipulated as preconditions for releasing the loans that were used during Turkey's recovery from the economic crisis.

#### **Problems arising from the Planning system [25]:**

The inadequate coordination among the institutions authorized in the area of Spatial Planning is one of the most important problems. It is observed that more than one competent authority in planning taking their planning powers from the institutional laws causes inharmonious planning process. Abundance of regulations and authorized administrations in relation to planning results in many changes in current plans. Moreover, no connection is established between the upper scale plans in the realm of authority of different institutions in terms of their intended use and physical decisions.

#### **Capacities of Local Governments**

One of the most important factors directing urbanization, the problems experienced by the local governments also adversely affects urbanization. One of the primary problems among them is inadequate number of competent specialists and technicians in the municipalities. Even if there are qualified personnel they have a serious work load. The inadequate financial resources of the local governments constitute problems to develop new projects.

## **3.2 Barriers in England around Retrofit and Area Regeneration**

### **3.2.1 Retrofit of Existing Housing Stock**

Within the REMOURBAN project there are over 400 residences being retrofitted in the demonstration area of Sneinton. Enabling residents to have warm, affordable housing is a key priority of Nottingham City Council. The regulation and policies that surround retrofitting are made at a national level and these do have impacts on the delivery of projects at the city level.

In recent years policies have focused on inexpensive measures such as loft and cavity wall insulation which bring the housing stock up to a “medium energy standard”. Measures that take the outcomes to the next higher level of energy standard are expensive and require subsidy – something the UK Government is moving away from.

With the properties in Sneinton, Nottingham City Homes is expected to pay for the retrofit measures and, as a result, the residents benefit. This can lead to some difficulties in funding the expenditure which is why we are moving towards a Pay As You Save (PAYS) mechanism within the Energiesprong model from the Netherlands.[41] The UK Government established the “Green Deal” in the past but this was unpopular due to high interest rates and costs. The main issue with “Green Deal” was that there was no guarantee that the savings would be made (in energy use terms) and that there would be a pay back to the customer in this scenario. We are now looking at performance guarantees in our contracts with retrofit contractors.

The accredited standard for external wall insulation installers - Pas2030 – in insufficient and people do not understand what it means. This combination means that consumers have little or no confidence in the product. Attempts to build confidence have only confused the message and the situation with consumers.

### 3.2.2 Area Based Regeneration – UK and Nottingham

As with other countries in the European Union the State Aid legislation requires that there is no competitive advantage over others, whether this is for a company or an individual. There is, therefore, no mechanism to plug any viability gaps for development activity.

Section 123 of the Local Government Act in the UK awards Local Authorities the power to dispose of land “in any manner they see fit” for the “best price reasonably obtainable.” This means that there must be a transparent disposal route which shows best value has been achieved – this can lead to longer than intended timescales as all options must be investigated.

In terms of Local Planning Policy there is often a difference of opinion between the developers and the local planning advice from the Local Authority. For example, planning officers may give permission for a low density scheme when developers would be looking for much higher density levels in order to achieve higher margins for a viable scheme.

Local Authority aspirations for low energy developments and sustainability by design often adds significant costs to the development - however – these do not necessarily add value to the overall development – meaning anything above and beyond a standard build requirement may become unlikely as a profit is more difficult to achieve. Some developers differentiate themselves by incorporating energy efficiencies into their buildings and are known as “eco-home” providers.

A significant barrier to development on large urban Brownfield sites is that when building on these, as opposed to Greenfield sites, there are only piecemeal areas of land available, so developers cannot achieve the economies of scale that make the development viable.

An interesting consequence of opening up the energy provider market in the UK is that, as consumers can switch providers, the energy companies cannot invest in area based schemes and that ESCOs [42] are difficult to put in place unless through private networks.

A barrier to area based retrofit is the “right to buy” [44] as our estates are a mix of private and local authority owned properties. This means that social housing landlords cannot knock down areas of buildings to make way for more new build eco-homes which would sometimes be the more beneficial for the overall scheme. We can only be certain to retrofit properties that we own which will not necessarily cover the whole of a housing area.



### 3.3 Barriers in Spain around Retrofit and Area Regeneration

#### 3.3.1 Retrofitting of buildings in Spain

The type of the residential buildings property or *condominium* (multi-users dwellings) in Spain makes difficult to carry out a low energy districts' proposal. As indicated in the D1.13 blocks of flats in Spain are characterized by a system of "horizontal property" (Horizontal Property Act, Law 49/1960, of July 21). This system means dividing the same building in different units of individual property. The common spaces must be managed as a whole in order to take decisions or envisage an intervention. Hence the difficulty for deploying any action, since in most cases it is also private housing, having no participation of the State or the Municipalities.

Regarding the facades with photovoltaic panels is necessary to approach the national legislation to understand the refusal to carry out installations, not so much for the complexity but for operational and economic matters. As it was already pointed out in D1.13, Spanish Royal Decree 56/2016 of the 2012/27 / EU Directive transposition requires the payment of a toll for generated electricity with solar panels for the purpose of own consumption as long as you are connected to the network. This regulation discourages investment in photovoltaic for self-consumption, since the payment of the toll is a less profitable investment for the owners of the building.

#### 3.3.2 Area Based Regeneration – Spain and Valladolid



Figure 5: The Municipal entity of Housing and Soil of Valladolid

Generally, large municipalities in Spain have set up entities to manage the soil and housing in cities. Valladolid is not an exception. As a medium-sized city, Valladolid considers undoubtedly necessary to entrust these tasks to an entity with the appropriate technical and human characteristics, creating the entity known as VIVA.

The Municipal Entity of Housing and Soil of Valladolid (La sociedad municipal de suelo y vivienda de Valladolid - VIVA, S.L.) was constituted in 1993 as a dependent body within Valladolid City Council, in the legal form of limited corporation.

The purpose of this company is the direct management of economic activity, promotion, construction, rehabilitation of homes and buildings that include, among others, the following faculties:

- **Planning:** The planning, development, parceling, acquisition and cession of land.
- **Promotion:** The promotion and construction of houses, buildings and premises.
- **Rehabilitation of buildings:** awarding and contracting of all kinds of works, studies and projects for the construction or renovation of homes, buildings and premises.
- The development of all competencies, faculties and activities transferred or entrusted by the city of Valladolid on land development, housing and services, economic or promotional activities.

The actions of a comprehensive rehabilitation and urban regeneration in Valladolid are the set of actions in the neighborhood areas, for rehabilitating buildings, mainly residential, and for retrieving, rebuilding and reuse different spaces and already consolidated city areas.

Within these actions, it is necessary to highlight the aim of transformation and adaptation of different areas in order to improve them, with respect and loyalty to its history, but getting first and foremost, higher energy efficiency and accessibility.

Valladolid City Council for years until now, through VIVA, has added to this policy the rehabilitation and urban regeneration and has been a pioneer in Spain thanks to some of their actions, which allowed the city to become a reference for other capitals and municipalities of the country.

This is the case of Integrated Rehabilitation Area (ARI) of Silversmiths, Cathedral and surroundings (Área de Rehabilitación Integrada (ARI) de Platerías, Catedral y entono <http://www.smviva.com/%20-%20!ficha/rehabilitacion/32/#!ficha/rehabilitacion/32/>), as well as the Rondilla ARI (<http://www.smviva.com/#!ficha/rehabilitacion/15/>) , whose first phase ended with great success and the second is in full implementation.

In addition, it is under consideration and development the Urban Renewal Area (ARU) of Polygon October 29, in the Pajarillos neighborhood (Área de Renovación Urbana (ARU) del Polígono 29 de Octubre) , and the R2CITIES project (4 de Marzo <http://www.smviva.com/%20-%20!ficha/rehabilitacion/54/#!ficha/rehabilitacion/54/>) to turn this district into a sustainable and energy self-sufficient neighborhood within the framework of the European program ' Smart City '(smart cities).

Regarding the specific intervention in FASA districts in Valladolid, the intervention is pending ratification by neighbors. Like on other cases, the City Council will help to carry out these actions through a Call for grants.



## 4 Identification of policy change catalysts and innovation, lessons from private sector and abroad

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### 4.1 UK and the City of Nottingham

This chapter gives an example of how REMOURBAN is changing thinking and practice around procurement, in a drive to both procure innovative solutions to urban challenges and to increase the levels of innovation within the public procurement practices themselves.

The main objective of public sector procurement in recent years has been to adhere to the necessary European and National financial regulations – which include all aspect of procurement and to achieve “value for money”.

In Nottingham, policy drivers have also been around maximising the benefits and impact of public procurement to citizens in the local area. There is obviously a challenge to deliver maximum local benefits whilst adhering to the open market principles of the European regulations.

Certainly, since 2007, Nottingham City Council has been reviewing its procurement policy, within the established European regulations, whilst trying to extend the benefits of any public procurement of goods and services to unemployed and disadvantaged citizens in the city boundary.

The catalyst for change was the aspiration to ensure that there was equality in terms of any benefits of economic activity and growth across the city. Within both European and National financial and procurement regulations there is the ability to target certain groups of people disadvantaged from the workplace. These were the unemployed and those deemed to be the furthest away from the workplace – needing extra training and support to compete and access jobs in the city’s job market.

Since 2008 with the economic recession and, in recent years with the ongoing issues around austerity, how and what local authorities procure has been reviewed.. Trying to achieve triple bottom line benefits – economic, social and environmental – within the confines of reducing budgets and, in the UK, a shrinking public sector has meant a complete review of the role of both the customer (Nottingham City Council) and the supplier.

The procurement of “innovation” has become a methodology being piloted by Nottingham City Council and being disseminated through the REMOURBAN project. Utilising the model of the public sector being “an intelligent customer” and the private sector providing a range of innovative ideas to address the problems of the intelligent customer new policies are being tested.

Building on the existing Small Business Research Initiative (SBRI) process that is facilitated by Innovate UK (non-departmental body aimed at fostering and championing innovation across a number of sectors in the UK) Nottingham City Council will address issues / challenges around independent living of an increasingly aged population. This is a problem shared by many Local Authorities across the UK and is being watched with interest.

Innovate UK will work with Nottingham City Council to issue a call for innovative solutions to the challenges of independent living – which could include assisted technologies in the home such as sensors and monitors. The first stage will review applications and choose a small number of companies (usually SMEs) to take their products to the next level. The problem owner – Nottingham City Council, will provide a small amount of grant funding to the chosen SMEs to enable them to undertake feasibility studies.

The next stage will then review these studies further and chose 1 or 2 SMEs to take the product forward to a proof of concept stage – one this is achieved and agreed the city will be able to showcase and test the products – disseminating the findings and the experiences to other cities – enabling replication – aligning perfectly with the principles of REMOURBAN.

Importantly the Intellectual Property rights stay with the SME – although if the selection process results in only 1 SME being able to take the technology to the commercial level then the contract will ensure that there is an open licence arrangement so as not to build in a monopoly.

## 4.2 Turkey and the City of Tepebaşı

Turkish administrative reform has been significantly catalysed by the drive towards EU membership particularly since the 1980's. EU accession has been the most important driver of the reorganization of Turkish Public Administration in light of principles that have shaped the EU system. The 2005 Progress Report of Turkey had highlighted;

*“The Law on Municipalities and the Law on Special Provincial administrations aim at strengthening the capacity of local government to deal with the challenges of rapid urbanization and mass immigration from rural areas. To this end, these laws introduce modern public management concepts in order to create efficient, result-oriented and transparent local government...”*

The regular report in 2006 however, reported that;

*“No progress has been made in adopting the Framework Law on Public Administration” and “as a result, the devolution of central government powers to local administrations was hampered”. The Report nevertheless acknowledges that “there has been some legislative progress” and that “the implementation of reforms adopted in previous years has continued”.*

The first metropolitan municipalities (Ankara, Istanbul, Izmir) in Turkey were established in 1984. Since then, both the number and the responsibility areas of the metropolitan municipalities has gradually increased. After extensive local government reforms since 2004, new public management measures such as decentralization, privatization, public/private partnerships, and development of tighter financial control mechanism have accompanied spatial expansion. During 1980s and 1990s, the debate about the optimal balance between scaling and local democracy was coupled with a debate about the extensive tutelage powers of central government over local governments in Turkey. In parallel to the extensive reforms in public administration since 2004, major local government laws have been changed to decrease the power of central government while empowering local governments. As stated in the Emergency Action Plan and the Public Administration Basic Law drafts of the newly elected government, (Justice and Development Party, which is still in power in Turkey) decentralization for the sake of democratization was one of the top priorities. The reforms were also in line with the European Charter of Local Self Government, as well as the dominant new public management paradigm.

The preambles of Act no. 5216 and Act No. 6360 explain the main reasons (among others) of rescaling as avoiding problems about planning and coordination among too many units, benefiting economies of scale, inadequate capacity and financial weakness of small size municipalities, inefficient and unproductive administration, lack of qualified workers in small units, etc. It has been argued that large scale local governments may provide quality public services, and may bring about fair distribution of resources.

In 2014, 30 special provincial administrations, 1.591 smaller municipalities, and 16.082 villages will be dissolved as a result of the expansion of the 30 metropolitan municipalities to provincial



borders. In these provinces, dissolved municipalities and villages will become neighbourhoods (*mahalle*), an administrative unit which has no legal entity. Moreover, all the existing district municipalities in the province will become metropolitan district municipalities. Dissolution of village administrations and sub-district municipalities has been criticized in numerous studies as a clear violation of the subsidiarity principle. This is claimed will lead to eradication of regional and local diversity, removal of decision making to distant municipalities, and inconsistencies due to different needs of urban and rural populations.

It has been argued that the expansion embeds significant degree of recentralization, and the locus of this recentralization is the metropolitan municipality. When the borders of the metropolitan municipality expand, its powers also expand. Main powers of metropolitan municipalities as listed below:

- Determining strategic plan priorities,
- Allocation of resources within the metropolitan municipality,
- Selective financial support to metropolitan district municipalities,
- Authority in disputes among metropolitan district municipalities,
- Extensive authority in planning

The power of the metropolitans is also reinforced by dissolution of special provincial administrations. The metropolitan municipality assembly becomes the only province-wide elected assembly after the dissolution of the provincial general assembly of the special provincial administrations. Thus it becomes the only channel to seek support for the sub-level municipalities. Moreover, the municipality model in Turkey is based on a “strong mayor/weak assembly” approach. With the latest legislation, the metropolitan mayor becomes the only province-wide directly elected representative. So, it could be claimed that the power will be concentrated in the hands of metropolitan mayors. Although we focus on recentralization on metropolitan level, it is also possible to claim that the central government becomes more powerful, too. Sectorial recentralization, Investment Monitoring And Coordination Office, Regional Development Agencies, and the political relationships between the mayors and the central government add to further weakening of district municipalities.

It can be identified that a reversal of the decentralizing reforms of the early 2000s has taken place [26]. It seems the big problems of the metropolitans are tried to be solved by making them bigger. However, this also makes the smaller local government units much weaker. Dissolution of local government units with laws, or decrees without listening to locals’ demands may be considered as opposing subsidiarity. It is also problematic to dissolve legal entities, and cultures of villages which are the only local government units that exercise direct democracy as well as sub-district municipalities that are the main school of democracy for people living in smaller settlements. Whether the provincial border is the optimal scale for metropolitan municipalities is yet to be seen. If the expanded metropolitan municipalities can provide better public services with lower costs to citizens who reside both in urban and rural areas while still nurturing local democracy, then its optimality will be approved. However, until that future, there is need to discuss the consequences of rescaling metropolitans in order to identify inclinations which may deteriorate the democratic gains of the decentralizing local government reforms which were brought about by the same government a decade ago after great struggles.

**Likely Impacts and Benefits of Regulatory Reform** [27]

A more effective, transparent and participatory local government machinery in Turkey would not only improve the overall public governance system but can also lead to significant improvements in the welfare of people at the local level, the cumulative effect of which can lead to enhanced human development. As such, impact is expected to be observed at many levels:

- Improve the capacities of the elected representatives and professional managers and staff of local authorities in managing participatory planning processes would eventually lead to better use of public resources. This improvement would not only enhance the responsiveness and inclusiveness of local governments but also result in considerable efficiency gains.
- Strengthened capacity of local authorities would accelerate exchange of know-how between the local authorities and thereby increase the outreach without placing an additional burden on the central government's already scarce resources.
- Increasing capacities of local authorities is considered as a cross-cutting issue, which would lead to catalytic effects in many other areas concerning efficient and effective governance.
- In the absence of city councils and other participatory mechanisms that foster democracy, transparency, accountability and citizens' involvement in local administration, the impact of the capacity improvements to be achieved at the local authorities would be limited.

Similar to any other supply-demand equilibriums, increasing the "quality" and "quantity" of demand (from the citizens) along with high quality "supply" (by the local authorities) is the strongest assurance of the sustained impact of local administrative reform. One of the important lessons learned from public administration reform from abroad is that, commitment of the local authorities is one of the most critical aspects of success.



## 5 Policy framework alteration recommendations

### 5.1 Developing new tender models

**Intelligent Customers and Problem Owners:** In section 4 the concept of the Intelligent Customer was examined. A move from procuring goods and services to procuring solutions to a challenge. This is one new tender model that seeks to form a relationship and increase collaboration between the customer and suppliers and between suppliers. Using the responses to tenders to refine and add value to the proposed solutions from the private sector is an iterative process that builds capacity in both the customer and the market. It also uses the city as a testbed and demonstrator for new processes and technologies allowing and encouraging further replication and shared learnings across the public sector.

**Collaborative Framework Agreements:** similar to the model described above, This looks at how the private sector can collaborate and provide a solution to a problem through shared experience and innovation, rather than depend on a totally competitive competition that tends to drive down price but, by so doing, does not enhance innovation.

Learning from recent examples in the Netherlands, Nottingham City Homes is working with the group Energiesprong – to develop, between the problem owner (Nottingham City Council / Nottingham City Homes) and the construction sector, innovative approaches to external retrofitting of existing housing stock. This innovative approach doesn't just consider the actual material and application of the external retrofitting, but also the financial modelling involved with the payback mechanisms in the social and private sector housing market. This aligns with the work with Deliverable 3.10 of the REMOURBAN project and more extensive work is being undertaken with partners Verdi.

### 5.2 Licencing procedures and opportunities for change

The examples detailed in the preceding chapter build on Chapter 4 and demonstrate how the REMOURBAN project is changing the perspectives, ambitions and ways of working within the public procurement framework.

Aligned to the examples given in chapter 5.1 partners are looking to develop different licencing arrangements. By taking on the role of an Intelligent Customer the public sector procurer can test the market for innovative solutions to Urban Challenges and can offer the city as a test bed for innovation. In times when public funding is a scarce resource, the use of the City's assets (such as District Heating systems and housing) as living test beds for innovative solutions provides SMEs, in particular, with the ideal arena to showcase their new products and processes, without the need for the provision of grants.

It also enables them and spin out companies from Universities, the opportunities to evidence base their innovations in an applied way – moving innovation from the workshop to the market place. A key part of this model is the firm condition that any Intellectual Property remains with the SME. In line with the workshop in Brussels and the EC's current thinking, there should be a safeguard to ensure that this process does not engender a sole provider of a product or service – thereby closing the market.

If, through the Intelligent Customer model, only one company appears to have the technology or product that is selected for the contract, then measures must be put in place in any contract to ensure that any such licencing agreement is open.

## 6 Training of buyers in procurement innovations

### 6.1 Training demand and responsibilities

**Lack of intelligent customers** – institutions that work with potential suppliers towards more innovative solutions to problems.

Reluctance to change (both clients and suppliers) that results in a lack of creativity as clients use an interpretation of regulations to block any change to the way things are done for fear of challenge.

Lack of long term policy (particularly with energy) that creates boom and bust conditions.

Over-reliance on purchasing based on price – this creates further competition rather than collaboration and leads to a “race to the bottom”.

#### **Overcoming the barriers and creating the environment for innovation**

There is a need to move from the traditional procurement of goods and services, where the tender specifications are very tightly drawn, to procuring a solution to a problem. ~The emphasis in the specification will be on the problem and what the outcome(s) needs to be in order to enable the suppliers to provide potential solutions. These, may or may not have already been thought of by those procuring or, indeed, could be the innovative application of technology that had been created for one purpose but entirely suitable for another.

This all necessitates a change in mind-set of both those who procure and those who supply. Increased collaboration between clients and their suppliers and between potential suppliers will lead to more innovation and value. This can only be facilitated to happen when there is a move away from the traditional process of total competition based on a prescriptive specification with no room for collaboration and added value. To quote John Maynard Keynes – “the difficulty lies, not in the new ideas, but in escaping from the old ones”.

#### **Institutional buy-in and support**

The majority of public procurement in the UK remains embedded in the traditional methodology – the client produces a tender specification for a product or Service and the market provides a response based on “best Price.”

Using REMOURBAN as a pilot and an exemplar – Nottingham City Council, with its partners in REMOURBAN, can evidence the innovation and added value that a new, “Intelligent Client” approach can bring. This aligns perfectly with the concept of REMOURBAN as a model of replication and dissemination.

### 6.2 Integrating all scales of buyers

It could be argued that using the Intelligent Client approach to procurement will only be appropriate in large scale projects and purchases. However, if we consider that a change of attitude is needed to encourage and adopt innovative procurement, then there is a case for including a wide range of procurement values so that innovation is seen as an integral part of procurement.

## 7 Impact assessment and likelihood of adoption for recommendations

### 7.1 Workshop aims and findings

The Workshop on SCC Enablers, held in Brussels in the frame of the 3<sup>rd</sup> Project Meeting, especially Part 11 – Regulatory framework optimisation, was an ideal opportunity to exchange very instructive views from the three Lighthouse cities on the impact assessment, the barriers encountered during the implementation of interventions, how these were overcome and provide some recommendations for future integrated urban planning developments.

Some cross-cutting barriers were also identified, such as:

- Delays in public procurement processes
- Several departments involved
- Lack of adaptation and flexibility of the cities to changes, growth and new challenges
- Lack of collaboration between multiple stakeholders with different interests.

Some open questions were also raised during this workshop:

- Which of these barriers exist in the lighthouse and follower cities?
- Are there other important barriers to be considered?
- About cross-cutting barriers: How many cities actually have a Smart City department and if so, where is it situated – with IT, environmental,? Is it a real cross-cutting department operating across the silos?
- Are there good practices in overcoming them?
- Which are the main risks related to optimising the regulatory framework?
- In view of the tension between central and local planning priorities and differential authority in different national settings (stemming from historical development), is there such a thing as “European best practice” in setting local “relatively more free” of central policy intervention? Any policy and/ or political advice to local government?
- How can the “rights to the city” agenda advocating increased citizen control of urban development questions be embedded in European Smart City programmes? Inclusive Smart Cities and Communities enshrined as the new “urban constitution”? Remembering that the EC considers that the ability of the citizen to help shape policies and delivery is one of the key components of a Smart City.

The following subsections present some findings sorted by Lighthouse city and by application domain.

*“We need to understand the mechanisms that lead people to change their attitude and behaviour. In the end, people want simplicity. They want equipment to work and to do things for them. They need to be incentivised, for instance in Brussels, it is not good to switch to travel by bicycle as the traffic is too busy. Comfort is the way to convince citizens. We should use several instruments in order to make REMOURBAN more effective: EIB financial instruments platform, procurement, space for innovation, policy and finance information.”*

#### 7.1.1 Valladolid

Valladolid focused its intervention at the 3<sup>rd</sup> Progress Meeting workshop on the identification of non-technical barriers.

In the case of Valladolid City Council, six different departments are involved in the project. There is a need to set up a cross-cutting department to centralise policy and delivery.

An important barrier in Valladolid is the difficulty for stakeholders in understanding the benefits of the project. Therefore it is a tough task convincing them of the interest of the REMOURBAN project.

Public procurement for Smart Cities is another cross-cutting barrier. Delays in the public procurement process are often observed and do not, in the main, lead to innovation of product and/or process.

#### 7.1.1.1 Valladolid – Low Energy Districts

Valladolid City Council identified some of the non-technical barriers. Those related to promotion of low energy can be classified as legal and normative (regulations for building retrofitting and for selling electricity, etc...) economic and social (lack of funding, new business models to be developed and applied, inconsistent pricing of heat etc...) and cultural (lack of understanding the benefits, lack of knowledge and skills and of coordination and cooperation between multiple stakeholders, etc.)

Another barrier linked with buildings (energy) is identified as the dwelling owners who do not necessarily identify easily with what the REMOURBAN model will provide them and the benefits that could be realised.

#### 7.1.1.2 Valladolid – Electric Mobility

In Valladolid, there are different departments dealing with mobility related issues. This shows again the need to set up a cross-cutting department to centralise decisions and actions. For Valladolid, this is a huge task for municipalities. They can provide some tools (e.g. Car-sharing etc...) to promote a more sustainable transport solution.

As there is a low demand for electric vehicles in Valladolid, electric utility companies must offer new business models that ease electric mobility adoption. The point of view of users has to be analysed, together with the manufacturers, energy suppliers and local authorities to provide a holistic solution that is sustainable.

#### 7.1.1.3 Valladolid – ICT

Some ICT related non-technical barriers were also identified, including reticence to use ICT, especially with personal data. Other concerns are also about privacy and about captive solutions (vendor lock-in) and non-interoperable solutions.

### 7.1.2 Tepebasi

Tepebasi focused its intervention at the 3<sup>rd</sup> Progress Meeting workshop on the optimisation of the regulatory framework. From their point of view, the current regulation is insufficient.

Some cross-cutting regulations and their potential for improvement:

- Procurement and tendering processes are inadequate
- Cooperation, networking regulations and laws do not suffice needs.
- Longer approval process for new technologies and recycled materials
- Lack of communication and coordination between local public institutions and municipalities and insufficient policy implementation efforts.

#### 7.1.2.1 Tepebasi – Low Energy Districts

Regarding energy actions, most parameters related to quality, performance and environmental effect remain subjective and difficult to measure and thus difficult to award. Moreover, there are

specific barriers regarding building regulations ; existing building regulation does not consider specific innovative technologies. One of these barriers is the denial to code green product materials, systems or design applications due to building code barriers for the approval of green building alternatives.

### 7.1.2.2 Electric Mobility

Regarding sustainable mobility, existing regulations for commercial car ownership does not allow specific measures for implementation of short term payback financial modelling. Moreover, regulations promoting electric vehicles ownership are highly inadequate. Existing regulations are non-compliant with most of the new technologies of EVs.

The regulation of data usage and gathering of data based on EVs for planning of sustainable mobility remains insufficient. In one word, electric vehicle ownership is not promoted enough by regulation.

### 7.1.2.3 ICT

As for ICT, there is a lack of regulation for data usage, protection, gathering and re-use of public sector information. Regulations are inadequate and noncompliance with existing regulations is observed.

## 7.1.3 Nottingham City Council

Nottingham City Council focused its intervention at the 3<sup>rd</sup> Progress Meeting workshop on the innovative public procurement strategies.

How to manage the requirements of national and local authorities could be problematic. There are differences in legislation at these levels and in the responsibilities to enforce them. Procurement, which adheres to European and National Directives as well as specific, additional requirements around equity for Nottingham City Council can be handled more innovatively and REMOURBAN provides the model to test and replicate these changes.

With austerity and reduction in public funds there needs to be ways of finding revenue streams. At the same time, procurement just based on price does not provide the level of innovation that greater collaboration between the public and private sectors can deliver. Just using price stifles innovation.

InnovateUK (Government sponsored innovation agency) runs a Small Business Research Initiative – SBRI. It brings public sector challenges together with SME innovative solutions. The city should be used as a demonstrator – a living lab that can provide the proof of concept needed for new goods and services – not dissimilar to the REMOURAN model.

### 7.1.3.1 Nottingham – Low Energy Districts

Building on the last point, there is a reluctance to change perspectives and mind-sets in both clients and suppliers. With external retrofitting for example, an over-reliance on reducing prices leads to a lack of collaboration in the sector and stifles innovation..

Some good practice in the Netherlands has been identified where the performance outcomes are procured – eg.an amount of energy savings and the suppliers collaborate to innovate their products to meet the savings. This identifies that there is a need to establish a mind-set that ingrains entrepreneurial attitudes, finding people that are creative with a drive to get things done.

### 7.1.3.2 Nottingham – Electric Mobility

Again there is a need to cultivate a different mind-set among both procurers and users of transport. In the REMOURBAN demonstration area Nottingham is piloting the “last mile – zero carbon” approach. This will involve the establishment of a local logistics hub that will receive deliveries for residents and businesses via the usual modes (mainly diesel vehicles) and will then deliver them for the last mile using zero carbon electric vehicles. The city council can introduce legislation to establish ultra-low emission zones in the city – thereby ensuring the use of electric vehicles in certain areas and tackling poor air quality.

This regulation is underpinned by an integrated public transport system – including the largest electric bus fleet in Europe – so that there are sustainable options for residents, that are affordable and easy to use. This includes the introduction of a City Smart Card that can pay for travel using a number of different modes of transport – tram, train, bus and electric car and bicycle hire.

This is all supported by mobile apps that can inform people where the hire cars and bicycles are, how much electric charge they have and can even undertake the process of hiring and paying for them.

### 7.1.3.3 Nottingham – ICT

There is the Nottingham wireless concession that is an example of good practice in public procurement and could be replicated in other cities..

In 2015 Nottingham City Council offered access to its street furniture for WiFi providers to install “small cell devices”, thus enabling the companies to deliver 4G mobile signals.

Nottingham City Council procured a wireless concession by means of which the successful bidder provides a guaranteed minimum payment to the city council, for use of the street furniture and a share of revenue. Citizens and visitors are able to use free WiFi in the city centre providing benefits to the Council, the provider and the users.

## 7.2 Links to evaluation work packages

There obvious links with chapter 7 and the work being undertaken in Work Package 2 – around indicators for Smart Cities and in D1.15 that looks at how these practices can be factored into integrated urban development plans.



## 8 Conclusions

### 8.1 Regulatory and Behavioural Aspects

As mentioned in chapter 7.2, this report builds on the findings of D1.13 and will inform the work on integrating urban plans within D1.15. Very often when we consider the delivery of complex, multi-disciplinary projects aimed at developing urban areas, the focus is on the actual capital works and not on the “softer” issues around behaviour, regulations and directives.

Each element of intervention, low energy district, electric mobility and ICT, has been affected by these behavioural or regulatory issues. If not addressed, or inadequately addressed, they act to reduce the impact of the interventions, extend the time taken to carry out the work and certainly detract from the full optimisation of the resulting impacts.

Perhaps the easiest elements to factor into the project plan, in terms of timescales, are those that are regulatory in nature – such as procurement, following EU and National Directives and financial regulations. Also the requirements of building regulations and any associated targets for energy consumption will be known and capable of being accounted for in any planning assumptions. This does not suggest that any of these regulatory or target driven elements are easy to accommodate but they will be known to the project deliverers before the commencement of the works and will, therefore, be capable of being factored into the project delivery planning process – where any risks can be managed and mitigated against.

The findings of D1.13 and this report have highlighted that unknown and, sometimes, random factors, especially behavioural in nature, are much more difficult to anticipate and, therefore, to mitigate against. Even behavioural factors can be subdivided into those affected by a perceived or actual aspect of the intervention or something apparently irrational in nature. The table below uses an example from each of the interventions to highlight known and unknown elements that affect the delivery of urban development projects.

	Regulatory	Non-Regulatory
<b>Low Energy District</b>	<p>“Right to Buy” policy in UK.</p> <p>In terms of area development – this policy leads to a mix of social and private housing making retrofit interventions, in particular, difficult to take forward at any scale.</p>	<p>Reduced energy costs so increase in individual / family’s use of energy.(Nottingham)</p> <p>While the overall aims of reducing energy costs are to reduce the use of energy, thereby reducing the amount of CO2 emissions and reducing fuel poverty. There is some evidence that individuals and families have used more energy because it is cheaper.</p>
	Regulatory	Non-Regulatory
<b>Electric Mobility</b>	<p>Ultra-Low Emission Zones.</p> <p>Within the remit of City Council transport policy is the ability to introduce Ultra-low Emission Zones – given this is a regulatory process there is a timescale within with consultation with businesses, residents and other organisations needs to be undertaken.</p>	<p>Lack of electric charging infrastructure. (all cities)</p> <p>A real or perceived lack of electric charging infrastructure deters people from using electric vehicles, as reported in Valladolid.</p>
	Regulatory	Non-Regulatory

ICT	Use of personal data.	Individuals' with low ICT expertise and experience may be excluded from many of the benefits from Smart City interventions, such as mobile apps, smart card payments.
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## 8.2 Underpinning and Supporting Actions

All of the cities have identified that there needs to be a mix of both requirement and encouragement in order to optimise the delivery and sustainability of urban development.

### 8.2.1 Low Energy Districts

Just a few examples from those identified in D1.13 and this report.

- Requirement in terms of building regulations that accept and expect green construction techniques and materials (Tepebasi)
- National Government Policy that is constant and does not lead to “boom and bust” pricing around external retrofitting and also does not focus on the cheapest options – such as insulation in isolation of other interventions.(Nottingham)

### 8.2.2 Electric Mobility

- Sufficient charging infrastructure to ensure that users are more likely to be encouraged to use electric vehicles. (Valladolid)
- Establishment of ultra-low emission zones in urban areas, using regulation at a city level, in order to ensure electric vehicles are used by both commercial and private owners. (Nottingham)

### 8.2.3 ICT

- Governance that keeps up with technology developments so that personal data is dealt with correctly and people feel that they safe in using technology ( all cities).#
- Not assuming that all citizens and businesses have the necessary experience and expertise to use new technology (all cities)

### 8.2.4 Optimisation

This report shows that sustainable urban development is complex and multi-faceted. It not only requires attention to the capital and built elements of low energy districts, electric mobility and the provision of excellent and integrated ICT in the urban infrastructure; it also needs attention paying to the softer, behavioural elements in order to be successful and to optimise the opportunities for people, businesses and organisations.

All of this needs supporting and, sometimes requires regulatory interventions in order to drive forward a holistic and sustainable approach and a positive outcome.

- Optimisation of low energy buildings will not be achieved if the residents do not understand the primary reasons behind energy efficiency. Optimisation will not be achieved if the National Energy Policy is focused on price and not performance.
- Optimisation of electric mobility will not be achieved if the necessary infrastructure is not in place so that people can use it easily and simply. Optimisation will not be achieved if people are unsure how to use it via mobile applications or by smart card provision.
- Optimisation of ICT and integrated infrastructure will not be achieved if data is not shared and there is not commonality in platforms and protocols. Optimisation will not

be achieved is people are concerned about how their personal data is used and that there is not sufficient governance in place to cover the scope of the technology.

As this report has also shown, most of these urban developments are underpinned by regulatory and behavioural elements. Aligned to this, though, is the need for public procurers to have an entrepreneurial mind-set – to seek, encourage and deliver innovative means of procuring goods and services and to build sustainable, beneficial outcomes, based on performance, not necessarily price, in order to maximise the benefits for citizens, businesses and organisations.



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