

# Contribution to the Green Paper: A 2030 Framework for Climate and Energy Policies

## Schneider Electric

### I) General

*Which lessons from the 2020 framework and the present state of the EU energy system are most important when designing policies for 2030?*

Firstly, an increasing number of stakeholders are paying attention to the issue of energy efficiency. In 2013 there has been a global increase of 10% year over year in companies that are paying “a lot more attention” to energy efficiency despite the crisis according to the Global Energy Efficiency Indicators conducted by the Institute for Building Efficiency. More than 1000 European businesses have implemented an energy management system, as defined in the standard EN ISO 50001, since mid 2011. Similarly, energy efficiency is increasingly supported by European citizens. According to the Eurobarometer survey<sup>1</sup>, 78% agreed that fighting climate change and improving energy efficiency can boost the EU economy and jobs - up from 2009 when 63% agreed that climate action could boost economy and jobs.

Secondly, benefits of green economy, including a stronger focus on energy efficiency, has to be better communicated at EU level so to better demonstrate the link between growth and greener technologies. The 2050 Energy Roadmap [\[COM/2011/885\]](#) has demonstrated that the combination of Energy Efficiency, Renewable and Smart Grid is a “no regret option” policy scenario that shall be the basis of the energy and climate framework:

- Energy Efficiency has to lead to up to 41% energy savings by 2050
- Renewable will become the main energy source in 2050 (40 to 60%)
- Smart Grid including demand management and storage are key to integrate renewable energy

### II) Targets

*Which targets for 2030 would be most effective in driving the objectives of climate and energy policy? At what level should they apply (EU, Member States, or sectoral), and to what extent should they be legally binding?*

Europe needs three targets, energy efficiency, carbon emissions reduction and renewable energy based on effort sharing rules. Targets shall be accompanied with binding measures (allowing sufficient flexibility at implementation level) and indicative sectoral approach.

The three targets are not related to the same problems. Energy efficiency is about improving the way we consume energy, renewable energy is about boosting new clean sources of energy while CO<sub>2</sub> reduction target is about lowering the quantity of CO<sub>2</sub> in the atmosphere. This is the reason why the three targets are equally important in driving the objective of climate and energy policy. In particular, energy efficiency has to be stimulated because it is a fundamental pillar to the achievement of carbon reduction in a business-friendly way. In the low carbon scenarios of the 2050 EU energy roadmap, energy demand needs to decrease by 32% to 41% (2050 versus 2005). Energy efficiency policies and CO<sub>2</sub> emissions reduction

<sup>1</sup> Special Eurobarometer 372, Climate Change

measures (mainly via the Emission Trading Schemes) target different sectors of the economy. Carbon pricing has to come with substantial efforts toward energy-efficiency in order to lead to cost-effective achievements.

*Have there been inconsistencies in the current 2020 targets and if so how can the coherence of potential 2030 targets be better ensured?*

The main inconsistency in the 2020 targets is that energy efficiency has been made non-binding. Energy efficiency could help to achieve the two others targets (CO<sub>2</sub> reductions and renewable energy) in a more business friendly way if it were to be put on an equal footing. In addition, the successful execution of the 2020 targets has suffered from a lack of measures aiming to strengthen the interaction between the three topics. The low CO<sub>2</sub> price at the end of the second ETS period is due to over allocation of allowances in a context of economic slowdown as well as an over use of CDM quota; interactions between the 3 targets (EE , RES,CO<sub>2</sub>) should be worked through simulation models in order to minimize the impact, specifically on ETS and CO<sub>2</sub> price

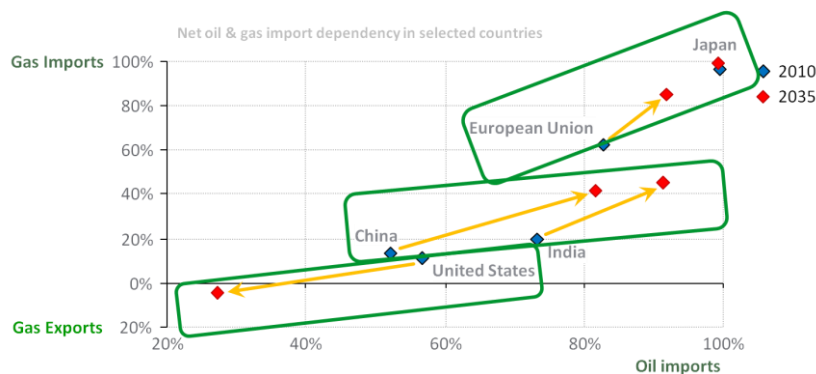
*Are targets for sub-sectors such as transport, agriculture, industry appropriate and, if so, which ones? For example, is a renewables target necessary for transport, given the targets for CO<sub>2</sub> reductions for passenger cars and light commercial vehicles?*

*How can targets reflect better the economic viability and the changing degree of maturity of technologies in the 2030 framework?*

It is important to maintain long-term targets in order to give visibility and stability to stakeholders. Targets shall be accompanied with binding measures (allowing sufficient flexibility at national level) and indicative sectoral approach. The European Union Institutions shall develop a technologies roadmap aiming to coordinate and facilitate the implementation of energy and climate objectives. The roadmap should aim to design harmonised incentives and policy measures that better reflect the potential of technologies they have at hand (Maturity vs. need for scaling up, CO<sub>2</sub> reduction, Energy reduction, Capex and Opex costs) for each sector.

*How should progress be assessed for other aspects of EU energy policy, such as security of supply, which may not be captured by the headline targets?*

According to the 2012 World Energy Outlook, the EU is importing more than 80% of oil consumption and more than 60% of gas. It would be interesting those imported energy sources are monitored in light of their final energy use per sector in order to adjust energy efficiency in such way that it could contribute to reduce energy dependency as much as possible ("the more energy dependency, the more energy efficiency").



*Table: Net oil & gas import dependency in selected countries*

While electricity should have a significant increase of the final energy demand by 2050, it would be useful to periodically review whether we are on track of scenarios foreplanned in the European Commission's Energy Roadmap 2050.

Last but not least, indicative targets for demand-response shall be developed at EU level with the specific aim to reduce our energy import and improve the integration of renewable hence looking at new cost-effective way to achieve a greater security of supply.

### III) Instruments

*Are changes necessary to other policy instruments and how they interact with one another, including between the EU and national levels?*

- The most urgent challenge for Europe is to link energy and climate policies to the growth and competitiveness agenda of the European Union. In the aftermath of the international economic and financial crisis, the EU is striving to get back the growth and 're-industrialization' on track. The green economy could be the main vehicle to support a transition to a more high-productivity and knowledge-intensive economy. Its growth potential has been demonstrated many times. If Europe is able to build and maintain a leading position in clean technology, increased exports could contribute about €25 billion per year to GDP in this first decade (Energy Roadmap, European Climate Foundation, 2010).
- The interaction between the green economy and EU industrial and competitiveness agenda has to become a key pillar of the energy and climate policy. One way to achieve a higher degree of integration between green and industrial policies is to conceive a plan targeting high-potential markets such as smart grid, smart cities and smart buildings. Such plan shall look to implement more coherently the EU energy and climate policy in light of their growth and jobs potential (e.g. Outlining how future regulations such as the future EPBD recast for example would support energy efficiency, CO2 reduction targets and renewable integration in a business-friendly way). Last but not least, a special effort shall be made to encourage national authorities to present their energy and climate plan at EU level so to strengthen link between EU and national level and get a higher-degree of acceptance of energy and climate policies by EU citizens.

*How should specific measures at the EU and national level best be defined to optimise cost-efficiency of meeting climate and energy objectives?*

The European Union Institutions shall work together in order to develop a technologies roadmap aiming to coordinate and facilitate the implementation of energy and climate

objectives. Those roadmaps would aim to design harmonised incentives and policy measures that better reflect the potential of technologies they have at hand (Maturity vs. need for scaling up, CO2 reduction, Energy reduction, Capex and Opex costs) for each sector.

*How can fragmentation of the internal energy market best be avoided particularly in relation to the need to encourage and mobilise investment?*

It is very important that energy and climate policies become a key pillar of the internal energy market. The reason why is there are a few issues which need to be addressed so to ensure a better coordination and harmonisation of policies at market level:

1. How can emerging markets for energy efficiency be harmonised across Europe with the aim to create business added-value?
2. How to ensure key policies objectives such as the integration of renewable energy and demand side management are implemented in a way which is profitable to the whole energy value chain (and particularly to new market players)?
3. How to integrate end-users in the discussion about the internal energy market so to promote new business sectors such as smart buildings, smart grids and smart cities?

*Which measures could be envisaged to make further energy savings most cost-effectively?*

Too often, policies measures fail to take into account two important dimensions of energy efficiency – the need to promote a systemic/holistic approach rather than a product approach and the importance of the economic rationale. The development of effective policy measures largely depends on connecting various sectors and technologies together in a collaborative and intelligence way. One clear example is the building sector. Impact of building technologies can be decupled if they are connected to others applications (i.e. smart grids). Smart grids and smart buildings can generate some €50 billion of annual energy savings in the EU by 2020<sup>2</sup>. The additional added value of these technologies will possibly come from complementarities between smart buildings, smart grids and other technologies such as electric cars. These are a few ideas which could help to a successful deployment of future policy measures on energy efficiency:

- Take into account ongoing performance at end-user level. Too often, there is a gap between estimated savings and achieved savings (20% and over). The gap is particularly significant in the building sector where new patterns of energy consumption frequently emerge. Measurement, visibility and control are three key issues which could reduce this gap as well as it would help to involve the end-user into energy savings “operation”. For example, the deployment of energy dashboard in federal buildings has been encouraged by the U.S. authorities since it could lead to an estimated 5-10% energy savings.
- Promote technology roadmap looking both at energy savings and return on investment – A recent report by the European Court of Auditors<sup>3</sup> demonstrated that there is a strong need to correlate spending on energy efficiency to a clear and short to medium term return on investment so to ensure public money is properly spend in the field of energy efficiency in buildings.
- Moving from a product to a systemic approach –A multitude of trends and innovations offer new opportunities for progress increasingly converging on the prospect of a system approach. Although concentrating on incremental component efficiency has yielded

---

<sup>2</sup> ICT for growth : A Targeted Approach', Michal Grajeck, Bruegel, June 2012

<sup>3</sup> "Cost-effectiveness of Cohesion Policy Investments in Energy Efficiency", Special Report No 21/2012

results to date, and may yield further incremental, small improvements, a holistic strategy promises to be a game changer. For example, building control systems are tying these developments together could substantially reduce energy usage and stress on the electric system, and ensure that buildings continue to operate properly.

- Promoting EE services (especially in cities) – If technologies are indispensable to efficiency, the development of services is critical to the development of long-lasting markets. The EU shall take this element into account in future policies since it holds a strong potential for job and business creation.

*How can EU research and innovation policies best support the achievement of the 2030 framework?*

Research and innovation policies should look to support further integration of energy efficiency, renewable energy and CO2 technologies. It shall focus on collaboration, platforming and deployment of technologies and services at end-users level (e.g. Micro-grid, smart buildings). It is also recommended to encourage at EU level networks of excellence in the field of energy efficiency, renewable energy and CO2 reduction looking at various relevant aspects (education, tax support etc).

*How should the new framework ensure an equitable distribution of effort among Member States? What concrete steps can be taken to reflect their different abilities to implement climate and energy measures?*

Binding targets for renewable energy, energy efficiency and CO2 reduction shall be based on effort sharing rules which would take into consideration specific national conditions. Targets shall be accompanied with binding measures (allowing sufficient flexibility at implementation level) and indicative sectoral approach.

*Are new financing instruments or arrangements required to support the new 2030 framework*

Financing instruments or arrangement shall be primarily focused on enabling market access, and developing appropriate market mechanisms (in particular allowing for the participation of Demand Response) rather than on subsidizing technologies. Future schemes shall aim to reduce risk and not to provide public grant in order to help to market development in a technology-neutral and customers-focus way. For example, financial schemes should be developed to help Energy Services Providers (ESCOs) to obtain loans from the banking sector in order to secure the forefront investment in every European country.

#### **IV) Competitiveness and security of supply**

*Which elements of the framework for climate and energy policies could be strengthened to better promote job creation, growth and competitiveness?*

While the European Union is on track to achieve its renewable energy and CO2 reduction targets by 2020, the European Union is unlikely to achieve its energy efficiency objective even after the adoption of the Directive on Energy Efficiency. However, the benefits of energy efficiency on job creation, growth and competitiveness have been demonstrated many times

- Energy Efficiency is the cheapest source of energy with a levelised cost of less than 40 € per MWh when generating 1 MWh of electricity cost from € 60-80 with conventional generation up to 100 (wind) -300 (PV)
- Energy Efficiency Investments are profitable with paybacks within few years (investment on improving efficiency of electricity consumption in buildings have in average a return on investment of two years according to the International Energy Agency)
- Energy Efficiency creates growth and jobs: IEA in its Efficient World Scenario (WEO 2012) has valued potential EU additional growth at about € 59billion per year or +0,7% in GDP by 2035 ; several reports have demonstrated investment on energy efficiency will create jobs (in average, one million Euro invested in Energy Efficiency in building create 17 net jobs)
- Stronger policy measures are key not only to achieve targeted objectives but simply to tap into the vast potential of energy efficiency. According to the IEA World Energy Outlook 2012, two-thirds of the economic potential to improve EE will remain untapped in the period to 2035 in the absence of new regulations, fiscal or financial incentives

*What are the specific drivers in observed trends in energy costs and to what extent can the EU influence them?*

Energy prices have been increasing significantly over the last years across Europe. The IEA's industrial price index for real electricity prices has increased by 37% in European OECD members within only 7 years (between 2005 and 2012), while the corresponding change in the US was minus 4%. Energy savings could have an impact on prices in Europe thanks to a combination of three factors

1. Energy efficiency policies in the EU will lead to lower fossil fuel prices in Europe
2. Lower electricity demand will lead to lower electricity prices
3. Infrastructure investments can be cancelled or postponed, leading to a further reduction of energy prices.

Ecofys has estimated for every €1 of direct energy cost savings, an additional €1 could be saved due to lower energy prices. Therefore, net additional annual cost savings of the order of €100 billion can be expected on top of the €107 billion that will result from implementing cost-effective energy savings measures

With about 573 billion Euros spend on energy import at EU level (in 2011), energy efficiency is a must-do to reduce public deficit and to enhance Europe's security of supply. It is also becoming a key issue for householders whose the spending on energy varies from 1450 € (in France) to € 2,400 (in the Czech Republic)<sup>4</sup>.

While Demand response does not always imply energy saving, it can be used as an insurance against fuel price volatility limiting price spikes in the electricity market.

*How to increase regulatory certainty for business while building in flexibility to adapt to changing circumstances (e.g. progress in international climate negotiations and changes in energy markets)?*

While the 20-20-20 targets has been set up in March 2007, the post 2020 climate and energy framework must renew and deepen the political commitment made by EU leaders in the

<sup>4</sup> Enerdata, What is the future for housing energy Expenditures

three policy fields – energy efficiency, renewable energy and CO2 reduction. Consistency and stability are critical to get the buy-in from business and citizens. Future policy measures shall build more flexibility in order to adapt future targets to any circumstances (flexible quota allocation in the ETS, control on incentives efficiency, R&D allocation).

*How can the EU best improve security of energy supply internally by ensuring the full and effective functioning of the internal energy market (e.g. through the development of necessary interconnections), and externally by diversifying energy supply routes?*

In the electricity sector, the integration of renewable energy is increasing the system operation costs, considering the fact that transmission system operators have to find flexible balancing tools to constantly compensate the intermittency of such new sources of electricity generation. In order to preserve European competitiveness, facilitate TSOs' operations, and allow for a wider integration of renewable, a particular effort should be made to develop Demand Response: in fact, by giving Demand Response a real and non-discriminatory access to the markets and by creating new market mechanisms revealing the flexibility value of Demand Response, the European Union could at the same time:

- Facilitate the operations for TSOs and DNOs: both would have access to affordable reliable and environment friendly tools to balance their system in real-time.
- Increase European industry competitiveness: a significant part of Demand Response revenues would ultimately flows to the Demand Response service providers, namely the electro-intensive industry.
- Favor competition in the electricity supply/retail by allowing Demand Response to participate in the electricity market. Curtailment service providers design innovative offers increasing consumer awareness on energy cost and driving more value to the end consumers.
- Allow for the integration of more renewables in the grid. While solving the intermittency issue of renewable energy, Demand Response could reduce the risk of integrating too much renewable energy in the grid.
- Create jobs: developing Demand Response requires also the development of aggregators, whose role is to bundle Demand Response capacities in order to provide a far more reliable service to the TSOs.

Demand response is one of the most effective programmes today that could address the need to address security of energy supply and ensure a cost-effective achievement of the energy and climate goals. Demand Response could create a reliable, repeatable and clean source of flexibility. For example in the USA 29.5 GW of demand side resources are under control and available to Market participants, lowering the number of peaking plants and increasing efficiency. Canada, Australia, South Korea and Japan also have significant levels of participation.