

**Brussels, 28 April 2014**

## **Orgalime contribution to the public consultation on the review of progress towards the 2020 energy efficiency objective and a 2030 energy efficiency framework**

### **Energy Efficiency & the Review of the Energy Efficiency Directive (EED)**

The European Engineering Industries represented by ORGALIME are firm believers in the potentials of energy efficiency: energy efficiency helps in securing the stability and robustness of the EU energy system and decreases Europe's dependence on energy imports and therefore our vulnerability. These are crucial elements for supporting the EU's security of energy supply. The EU 2050 Energy Roadmap identifies energy efficiency as a "no regrets option" and confirms that a high energy efficiency scenario leads to lowest electricity prices. Thus, energy efficiency helps to reduce consumers' energy bills and to alleviate energy poverty. The International Energy Agency (IEA) confirms the significant potential of energy efficiency and energy savings measures to help for gaining time for a global climate change agreement and for boosting growth.

Orgalime industries have been making significant investments to provide ever more sustainable and energy efficient end-use products, energy management solutions and services to other energy users, both industries (such as chemical, automotive or food) and private consumers, to enable the better management of their energy consumption.

Orgalime industries fully support the 40% Greenhouse Gas Target of the Commission's proposal for a 2030 Energy and Climate Framework. However, we were disappointed that no immediate energy efficiency commitment was made in the proposal.

We call for a 40% lead GHG target and suggest its immediate combination with indicative EU targets of 30% for renewables and 40% for energy efficiency. Minimum binding national energy efficiency and renewable energy sources (RES) corridors, which respect the EU's 2020 commitment, would in our view successfully pave the way towards a competitive, low carbon economy, jobs and growth in Europe. Considering the international dimension of this debate, we encourage the EU to make the necessary efforts to obtain a global and legally binding climate change agreement at the United Nations Framework Convention on Climate Change in Paris in 2015 and to secure the overall competitiveness of European manufacturing industry.

Our industries also remain disappointed with the rather low level of ambition of the existing Energy Efficiency Directive (EED) and the fact that Europe is likely to miss its 2020 energy efficiency objectives. The 2014 EED Review should, in our view, be the occasion to reinstall the level of ambition needed to come on track for 2050 and to complete the gaps in the fields of buildings, transport and industry, but also renewable energy sources and smart infrastructures.

*Orgalime, the European Engineering Industries Association, speaks for 38 trade federations representing some 130,000 companies in the mechanical, electrical, electronic, metalworking & metal articles industries of 23 European countries. The industry employs some 10.3 million people in the EU and in 2012 accounted for some €1,840 billion of annual output. The industry not only represents some 28% of the output of manufactured products but also a third of the manufactured exports of the European Union.*

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Reinstating an energy efficiency target as an immediate part of the 2030 climate and energy package together with a timely and ambitious EED review appear of utmost necessity to us, if the EU is to catch up with its 2050 objectives and to implement its overall EU Industrial Policy Objectives.

Orgalime would like to provide the following additional recommendations to foster energy efficiency:

1. Ensuring full and harmonised implementation of the existing legislation relevant for energy efficiency, especially the EED, the Energy Performance of Buildings Directive (EPBD), the Eco design and Energy Labelling measures, the just adopted Directive on Alternative Fuels Infrastructure Deployment and the national programmes for the roll out of smart meters. Proper market surveillance of these policy instruments is essential.
2. Implementing any new indicative EU energy efficiency target of the 2030 Framework during the EED review throughout all market segments, and the buildings, energy, transport and industry sectors in particular.
3. Extending the EED to renewable energy sources and smart infrastructures.
4. Promoting energy efficiency with stable and foreseeable incentives and return on investment to give EU industry long term planning certainty.
5. Better addressing the energy efficiency of existing buildings, including technical installations, internal equipment, and automation and control equipment, through the EPBD review, for example through setting a clear and simple renovation target for all buildings according to the type of building.
6. Fostering the deployment of existing energy efficient products and technologies to fully explore overall savings potentials, including at the system level, especially in the industry, building, energy and transport sectors.
7. Providing a clear political signal, such as clear and overall emission reduction targets, to promote a sustainable range of transport solutions, and promoting the build-up of an interoperable, alternative fuels infrastructure in Europe.
8. Supporting the development of energy infrastructures, which will be able to cope with an increased share of RES and energy efficient technologies.
9. Optimising the use of energy generation, transmission and distribution infrastructures, especially through demand response.
10. Removing regulatory barriers to demand side flexibility: consumer empowerment with the consumer's right to decide needs to be at the core of the EU internal energy market in the future. Art. 15 of the EED should be screened in this respect.
11. Supporting financial mechanisms and instruments fostering energy efficiency investments, such as the use of EPC and ESCOs, the development of loans guarantee, the standardisation of green "bonds" or the use of life-cycle costs analysis.
12. Raising awareness of the energy end-user and the whole business chain on energy efficiency, existing efficient products and solutions, but also financing mechanisms.

*Orgalime's detailed recommendations are specified hereafter:*

## **A. Energy efficiency targets and measures**

### **1. Do you think the right approach in addressing the shortfall is:**

- X a) To define energy efficiency target(s)  
 X b) Reinforced implementation of existing legislation, including active policy on infringements  
 c) Proposing new legislation  
 X d) Other

### **1.a.1. How should these target(s) be expressed?**

- In terms of energy intensity improvements of the economy and economic sectors  
 As absolute energy savings  
 As a hybrid of the two represents a better benchmark upon which to frame a 2030 objective  
 No opinion

### **1.a.2. At what level should they apply?**

- EU                       National                       Sectoral

Orgalime reply: An appropriate combination of all 3

### **1.a.3. Should they be:**

- Legally binding       Indicative                       No opinion

Orgalime reply: A combination of an indicative 40% EU energy efficiency target and legally binding national minimum corridors in the 2030 Energy and Climate Change Framework and consequent implementation of these in the EED.

### **Further comments on targets:**

Orgalime calls for an indicative EU 40 % energy efficiency target inside the 2030 Energy and Climate Change Package. In order to maintain the momentum of the existing 2020 targets and in the light of the EU's long term 2050 commitments on Energy and Climate Change, we suggest to immediately accompany this indicative EU target with intermediate binding national corridors for energy efficiency (meaning minimum levels to be achieved for the energy efficiency at national level on the road to 2030 with the 2020 targets to be retained). This would provide the urgently needed political signal to promote energy efficiency, but also legal certainty and predictability for the European industry.

As regards the type of target in the EED Directive, Orgalime suggests opting for an energy relative savings target, which is a combination of energy intensity and absolute energy savings. The energy relative savings target should be based on a reference scenario (so-called "business as usual"). The target should indicate a quantity of energy to be saved according to a reference scenario, but can be adapted to economic fluctuations, especially if the economic situation significantly differs from the projections. The overall energy efficiency target could be reflected in specific energy consumption targets for some sectors, such as the building, industry and transport sectors.

Defining the target in relation to economic output indicators, especially GDP, follows an approach taken by other important regions in the world, for example Japan and China, and therefore also bears an additional competitiveness factor. Contrary to an absolute energy savings target, the relative target would not result in putting a ceiling for the EU industry, but also for the whole economy, and therefore not undermine the long term EU strategy for sustainable growth and jobs.

Furthermore, we encourage the exchange of good practices implemented over the past years in Member States, which resulted in significant energy savings, through existing platforms, such as the Concerted Action Fora. This would help to understand which specific approaches have been most successful and how these measures or projects could be used as a model for other Member States.

**Please specify your response b) “Reinforced implementation of existing legislation, including active policy on infringements”:**

The Commission should pursue that all existing Directives aiming at improving energy efficiency are actually implemented, especially the EED, the Energy Performance of Buildings Directive (EPBD), the Eco design and Energy Labelling measures, the just adopted Directive on Alternative Fuels Infrastructure Deployment and the national programmes for the roll out of smart meters.

Furthermore, the Commission should ensure that the implementation of legal provisions of EU regulations is fully harmonised throughout the European Union. Any national interpretation cannot depart from the fully harmonised Community law. For example, there is a different interpretation amongst the different Member States on the eco design measure on electric motors (Commission Regulation 4/2014, amending Regulation 640/2009). The measure should not apply to electric motors that are designed for use in a means of transport for persons or goods (for example, electric motors designed only for use on a ship), since the Eco design Directive (2009/125/EC) excludes means of transport for persons or goods. However, we are aware that one enforcement body has interpreted that only motors specifically designed for means of transport for persons or goods are excluded. If the same product is designed for use in a means of transport for persons or goods and for a non-transport use, it should comply with all relevant requirements, that is standard motors which could be used on ships but also elsewhere (dual purpose) cannot be considered exempt from the Regulation 4/2014. The interpretation on electric motors designed for use on a ship seems to be different in other Member States.

In addition, we urge regulators to improve consistency and coherence of the above mentioned pieces of legislation promoting energy efficiency, but also beyond, since this impacts industry’s competitiveness. The ever more complex body of the EU legislation is increasingly of concern, especially for integrated multifunctional products, which may be subject to several inconsistent or even contradictory regulations. The Eco design and Energy Labelling Directives are generally coherent and work well together in addressing the energy efficiency aspects of energy using products. However, other pieces of EU environmental legislation act in isolation: for example substance restrictions under RoHS and/or REACH, which increasingly interfere with the energy efficiency requirements of products. We call for setting clear political priorities considering that different environmental parameters can influence and also conflict with each other as well as a consistent implementation of the given decision throughout the EU regulations.

Finally, appropriate resources should also be provided, at the level of the Member States, to ensure effective enforcement and market surveillance. Industry is indeed concerned about the failure to follow up the adoption of EU legislation through proper market surveillance, such as ecodesign and energy labelling measures, as it undermines industry’s efforts.

**Please specify your response c)**

No comment.

**Please specify your response d)**

No comment.

## **B. Energy efficiency sectors**

**Note:** For the purpose of section B of this questionnaire, Orgalime understands that the term “*further policy measure*” would not necessarily mean a new legislative instrument (i.e.: a new Directive or Regulation), however could include different measures, such as the setting up of energy efficiency target(s), amendments/reviews of existing Directives to close gaps, or the promotion of incentives and other support measures.

## **2. Do you think that further policy measures are needed at EU level to foster energy efficiency in buildings?**

Yes                       No                       No opinion

### **Please give details:**

Nearly 40% of the EU final energy consumption occurs in buildings<sup>1</sup> and the sector offers significant potential for energy savings. Therefore, improving the energy efficiency of buildings, including technical installations and internal equipment, appears of utmost necessity for putting the EU's energy and climate change targets into practice.

We believe that the Energy Performance of Buildings Directive is the appropriate legislative framework to tackle the energy efficiency aspects of buildings and technical building systems. However, its implementation at national level should be improved, since expected energy savings have not been delivered yet. Indeed, in its report, the Commission concluded that *"too little progress has been made by the Member States in their preparations towards NZEBs by 2020"* and *"the Member States have to significantly step up their efforts to implement the requirements regarding NZEBs in the EPBD to ensure that the EU's longer-term climate objectives are not jeopardised and the building sector can take full advantage of the opportunities NZEBs present"*<sup>2</sup>.

In addition, an accelerated revision of the EPBD is in our view necessary to better address existing buildings. Considering that over 80% of the existing buildings will still exist in 2020, the refurbishment of all existing buildings, including technical installations and internal equipment, should therefore be the top priority. A strong EU framework on the buildings renovation will bring multiple advantages, such as short returns on investment and high levels of energy savings in residential as well as non-residential buildings. In addition, the convergence of smart grid and buildings agendas could amplify the benefits.

We set some key principles to be considered for addressing efficiency of the existing buildings:

- Set up clear and simple targets, for the short and long term, for all buildings according to the type of building.
- Foster the metering and monitoring of actual energy consumption and other parameters, such as temperature and indoor air quality, as well as the use of data to monitor possible malfunctions and motivate users to reduce energy use.
- Take into consideration the building as a whole (including the envelope, the technical installations and internal equipment as well as the building automation and control equipment), improve energy performance within buildings and address occupants' behaviour.
- Assess the building in its overall environment: it should be considered as a key element of smart cities in interaction with the smart energy infrastructures.
- Foster deployment of the energy efficient equipment and technologies in buildings.
- Foster development of best practises in the field of installer's training, labels and certifications for residential building in order to ensure high quality of building renovation.
- Address savings potentials at the system level in buildings, since efficiency increases on the product level are reaching their technical limit and system engineering often results in much bigger efficiency gains.

## **3. Do you think that further policy measures are needed at EU level to foster energy efficiency in industry?**

Yes                       No                       No opinion

<sup>1</sup> *Energy Efficiency Plan 2011*, European Commission, March 2011

<sup>2</sup> Report: *Progress by Member States towards Nearly Zero-Energy Buildings*, European Commission, October 2013

**Please give details:**

While progress has already been achieved, unrealised energy-saving potential still remains to be explored in the industry. To fully explore the overall saving potential, investments in energy efficiency need to become a strategic management decision in a systemic and holistic way (through energy management systems):

- A general approach for improving energy efficiency in industry is based upon performing an equipment inventory, an assessment of the energy savings potential for each piece of equipment, and an action plan with monitoring and reporting. This can be developed through a professional audit of the main processes.
- The business environment and regulation will have to make the topic of energy efficiency as important as quality models, such as ISO 9000 and 14000 standards or the Capability Maturity Model (CMM) scheme in the field of software development.

In addition, high energy savings can be achieved in production processes through for example:

- The better use of industrial energy and waste heat recovery, as well as a better use of waste as a resource (such as heat, energy, raw material).
- The deployment of efficient electric motors (which are consuming up to 70% of electricity used in industrial applications) and retrofitting of motors to equip them with variable speed drives.
- The optimisation of energy consumption through appropriate automation and control equipment to better manage various power flows (electric, gas, water), monitoring systems and maintenance.
- Lighting systems, optimisation of the load of transformers thanks to an optimised power factor, and improved quality and service thanks to uninterrupted power supply (UPS) or electronic power supplies are some of additional technologies to achieve energy efficiency targets.
- Removing (regulatory and market) barriers to industrial demand side response and management: an overall EU energy system with true consumer empowerment at its core.

We see the urgent need for a better market uptake of available energy efficient equipment and technologies. The EU legislative framework, especially the EED, needs to be fully implemented as a first step.

Furthermore, we fully encourage raising awareness of the energy end-user and the whole business chain (such as architects, builders, engineers, auditors, installers) on energy efficiency, as also required in Article 17 EED. In addition to information on pay back / return on investment calculation, training should be given on life-cycle costs analysis (LCCA) that allow better comparison of the different combination of measures. This will help fostering the installation and use of ever more energy efficient solutions in industry.

Finally, we call for appropriate incentives to support energy audits and energy management systems, but also a continuation of the existing national schemes already in place, especially for implementing the EED provisions (Article 8 EED). Mandatory energy audits should neither run counter to these types of agreements, nor result in abandoning or the renegotiation of such politically sensitive agreements. Companies should not be burdened with additional legislation leading to bureaucracy and costs.

**4. Do you think that further policy measures are needed at EU level to foster energy efficiency in transport?**

Yes                       No                       No opinion

**Please give details:**

The transport and logistics sectors are vital for the competitiveness of engineering industries because of the costs implied for consumers and for the entire goods supply chain. We fully support the Commission's 2030 proposal that identifies the transport sector as a segment offering major untapped potential in terms of energy efficiency. We believe that energy savings can be generated through the optimisation of transport logistics and traffic management.

In our view, further policies measures are necessary:

- To provide the urgently needed, clear political signal, such as clear and overall emission reduction targets, to promote a sustainable range of transport solutions (for example low-emissions and electric vehicles) and the build-up of an interoperable, alternative fuels infrastructure in Europe as a means to stimulate sustainable growth, jobs and technology take up.
- To overcome political barriers, in particular in cross-border transport or infrastructures.
- To foster the diffusion of innovative and interoperable technologies that can help to save energy and reduce CO2 emissions, in the different type of transports, such as:
  - Road transport: energy efficient motors for cars, efficient street and road lighting systems, traffic control systems;
  - Rail transport: rail energy storage or automatic train supervision;
  - Maritime transport: waste heat recovery systems and thermo-efficient systems in vessels, shore-side electricity.

The just adopted Directive on the Deployment of Alternative Fuels Infrastructure can in our view help to achieve energy efficiency improvements in the field of road transport. We call for as timely and as ambitious as possible an implementation of the Directive, ensuring that:

- Electric vehicle infrastructure is a key element to the development of a smart grid: therefore, it is important that any recharging points installed should be compatible with the smart grid, and allowing for smart charging as a key enabler for energy management in homes and buildings as well as in public charging stations;
- An ambitious minimum number of recharging points for electric vehicles is put in place by 2020 to provide a clear investment signal for both, the private investors required driving a significant deployment and for our industry, which develops and manufactures the technologies.

**5. Do you think that further policy measures are needed at EU level to foster energy efficiency in electrical equipment?**

Yes                       No                       No opinion

**Please give details:**

With its aim at removing the least energy efficient products from the market, the Eco design Directive together with its ongoing implementation on some 46 different products of our industries is a milestone of the EU's energy efficiency policy. In addition, it is complemented by the Energy Labelling and Eco-labelling Directives that improve consumer awareness and aim at rewarding best performing products on the market. Given the existing EU legislative framework, we do not believe that any further policy measure is necessary. However, its implementation might be improved, as highlighted in the two review studies carried out by ECOFYS and CSES. Orgalime suggests some options for improving the implementation in its recent position papers:

- Strength, weaknesses, improvement options of the Ecodesign and Energy Labelling Directives , September 2013 (see [here](#))
- Response to ECOFYS online survey on the evaluation of the Energy Labelling Directive and certain aspects of the Ecodesign Directive, November 2013 (see [here](#))

- Comments on draft ECOFYS interim report on the evaluation of the Energy Labelling and Ecodesign Directives, March 2014 (see [here](#))

Regarding the trend to shift eco design implementation to B2B products, we recommend keeping the focus on the technological aspects that the manufacturer can control and influence. Many complex products of the capital goods sector have no constant operating point so that specific energy efficiency requirements can often not be determined and, therefore, require a different and, if any, a case by case approach.

There are still improvement potentials through a better exploitation of energy savings at the system level. While efficiency increases on the product level are often reaching their technical limits, appropriate system engineering often results in much bigger efficiency gains. However, we see practical limits for targeting components that go into systems under the Eco design Directive, despite their efficiency potentials: there are issues of practicability, measurability and simplicity. In addition, we recommend fostering the engagement of installers in the implementation of the Energy Labelling Directive, especially for products that go into the systems.

#### **6. Do you think that further policy measures are needed at EU level to foster energy efficiency in generation and distribution?**

Yes                       No                       No opinion

#### **Please give details:**

We feel that the necessary EU legislation to foster energy efficiency in generation and distribution is generally in place, including, for example, the ongoing Ecodesign implementation measure on transformers, the Electricity Directive and the Ten-E Regulation.

However, we see the benefit of increasing the overall efficiency of the energy system with the optimisation of the use of generation, transmission and distribution infrastructures. Shifting parts of consumption to low cost periods helps to relieve pressure on the energy system. This will generate positive effects on the system's stability, on the prevention of black outs, for peak shaving and reduce the need for costly new investments. Society as a whole will cover its energy needs with a lesser installed supply and transmission capacity. Demand side flexibility thereby contributes to the EU's objective of security of the energy supply.

To allow energy efficiency technologies to deliver their full potential and optimise their energy use, we identify the following needs:

- Creating a pan European electricity grid for the future that delivers a high level of supply security, is capable of interconnecting and integrating large-scale energy streams from a variety of energy sources, especially renewables, and also offers the means for each end user to efficiently manage the energy consumption in terms of CO2 emissions and cost;
- Removing national legislative barriers slowing down smart grid technology deployment;
- Optimising the use of energy generation, transmission and distribution infrastructures, through:
  - Enabling market access for demand response by clear network and market rules for the cost-efficient participation of demand side resources alongside with power generation (introduction of time-differentiated prices and load-based tariffs for all consumers, allowing participation in demand side response to all sectors, more transparent market rules);
  - Ensuring the roll-out of smart metering with the appropriate functionalities;
  - Establishing a competitive production of highly efficient energy storage with technologies, such as pump storage hydro power or batteries in electric vehicles;

- Fostering the deployment of energy efficiency technologies in power generation (such as combined heat, cooling and power technologies) as well as in distribution and transmission (such as transformers).

Overall, Orgalime supports a fully completed, interconnected, consumer centric future energy market in Europe. We support the liberalisation of the energy retail market as an important element of a well-functioning European energy market that allows consumers to enjoy the benefits of available, innovative energy efficiency and low carbon technologies and services. Consumers need to be able to achieve better control of their energy costs, consumption and overall autonomy through the combination of decentralised energy generation, with energy management systems and smart appliances. The role of the consumer is crucial for the future energy system - the consumer (“prosumer”) needs to have the right to decide.

### **7. Do you think that further financial mechanisms and instruments are needed at EU level to mobilise energy efficiency investments?**

Yes                       No                       No opinion

#### **Please give details:**

Investments in energy efficiency should be a top priority in all sectors and the declining balance method or tax incentives should foster investments. However, companies often prefer investing in their core business, for example R&D to develop new products. Most of the time, increasing energy efficiency of a production process or a building appears as a secondary objective. This can be due to the absence of incentives, but also to the lack effectiveness of existing incentives. Therefore, appropriate and effective financial and tax mechanisms and instruments, including incentives, are of the utmost necessity to foster investments and allow available energy efficient equipment and technologies to deliver their full potential in terms of energy savings. Transparency and effectiveness of existing incentive mechanisms should be evaluated first, and then the appropriate ones should be integrated in more competitive structures.

The EED foresees financial mechanisms and instruments to support energy efficiency investments, such as the establishment of financing facilities or an Energy Efficiency National Fund, but also the use of energy performance contracting and energy service companies to finance building renovations. We therefore call for an ambitious and urgent implementation of such measures at national level.

In addition, at EU level, we see the need for:

- Supporting the use of Energy Performance Contracting (EPC) and Energy Service Companies (ESCOs), beyond the building sector, to accelerate energy efficiency investments;
- Developing loan guarantees;
- Standardising “green bonds”;
- Developing a general policy on tax incentives, including measures dedicated to SMEs;
- Facilitating the use of EU funds to support local and public authorities’ investments, such as in the energy efficiency of buildings: this would allow public authorities to lead by example, thus favouring market uptake and stakeholders’ involvement;
- Supporting the use of life-cycle costs analysis (LCCA) for more costly and complicated projects, instead of the usual pay back/return on investment calculation;
- Developing new financing models allowing investments in long term projects (even if the payback period is over 3 years) and making real future efficiency yields effective in liquidity in the present. The companies are given a loan, which pays an advance on the expected additional yield from energy savings as a result of the investment beyond the investment costs. By increasing the liquidity of the company, investments in energy efficiency become a strategic focus for the company management.

Last, but not least, further effort should be dedicated to raise awareness of the existing and future financial incentives and grants to foster energy efficiency investments. To deliver their full potential, subsidies and financing schemes supporting building renovation need to be predictable and stable over time and not be subject to sudden changes, which discourage investors. Administrative burdens related to financing measures and incentives should be limited to the strictly necessary level.

**8. Do you think that further measures are needed to build the capacity of actors in the energy efficiency sector?**

Yes                       No                               No opinion

**Please give details:**

Raising the awareness is an indispensable prerequisite for changing behaviour towards more energy-efficient and sustainable consumption patterns. Therefore, we fully believe that capacity building are needed, especially beyond the area of energy efficiency specialists, since a better understanding energy efficiency benefits will contribute to a better market uptake of efficient equipment and technologies.

Provision of the EED should be fully implemented to improve the quality and the rolling out of energy audits and energy management systems. We particularly call for the multiplication of training programmes for the qualification of energy auditors (to be harmonised at EU level) as well as an improvement of quality of such trainings.

In addition, we support the setting of learning networks, such as energy efficiency networks. The facilitated exchange of experience offers companies the chance to network, share best practices and obtain information from qualified energy consultants. For example, existing networks in Germany demonstrate that companies save 50% more energy when participating in such networks ("30 Pilot-Netzwerke" of the Ministry of Environment - BMUB). Similar networks have been implemented in France in collaboration with ADEME and the local Chamber of Commerce.

**9. What are the most promising technology solutions that can help deliver energy savings in the 2020 and 2030 time horizon? How can their development and uptake be supported at EU level?**

Many examples of best and promising practices exist, such as:

- wind-power, photovoltaic, frequency converters as already mature technologies;
- off-shore wind-power, high voltage DC-transmission, e-mobility, new battery technologies, smart grids, demand response, electricity storage, building automation, integrated heating, cooling and ventilation, district heating and cooling, cogeneration of heating/cooling and electricity, heat pumps, fuel cells and hydrogen technologies, waste management integrated to energy production, gasification of solid residues or second generation biofuels for traffic, as emerging technologies, or
- carbon capture and storage and fusion energy in the long run.

However, no single promising technology will be able to address all aspects of energy efficiency. Instead, a mix of technologies will be necessary. We believe in the principle of technology neutrality instead of favouring certain technologies over others. We believe that it is essential to remain open towards emerging technologies, since pre-selecting technologies on the basis of today's knowledge risks hampering industry's innovation.

We suggest applying the following principles:

- Tools and mechanisms to support development and uptake of promising technology solutions should be technology-neutral and focus on results;
- Technology should be regarded as not only reducing the conventional demand but also as managing the real demand;
- The scope of policy measures should go beyond products or elementary systems and be more holistic, for instance considering the interaction of a building and its environment or dealing at district level.



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