General policy approach

An adequate European legislative framework is needed in support of the transition towards renewable energy sources, including phasing out subsidies for fossil and nuclear energy and implementing an EU-wide carbon tax.

The new energy model needs to be based on a much more decentralised approach. Most emphasis has to be put on developing a more decentralised energy system, especially with R&D on storage systems and smart grids on district and city levels.

Financial support and adaptation of legal framework conditions for cities, municipalities and regions is needed to promote the creation of decentralised infrastructure for renewable energy.

Targets related to renewable energy need to be binding. We can see from the current EU energy policy that the only objective that is not compulsory – 20% energy efficiency target – is seriously lacking behind. Therefore legally binding targets are necessary. The targets need to be ambitious but achievable. Sector specific targets are more difficult, mainly due to the close interlinks between heating and electricity as well as transport and electricity.

Financial support

For electricity, the instrument having proven to be most successful is a Feed-in Tariff. Experience in many countries shows that technology-specific Feed-in Laws have supported the massive expansion of renewable energies. Their special quality is that they enable homeowners, farmers, cooperatives etc., to participate on an equal footing with large commercial developers of renewable energy. They foster citizens’ engagement (and acceptance) as well as investments and are fundamental for building-up a decentralized energy system. At the same time, the massive expansion of RES reduces the price for the corresponding technologies and pushes competitiveness of the EU.

For heating/cooling good regulations still need to be developed. Regulations should be put in place which make the utilisation of waste heat compulsory. In the transport sector, tax reliefs for using electricity generated by RES could be given; and railways should follow a quota system.

Currently the most distorting „support scheme” is the absence of any internalisation of external costs in the energy price. As an example, the apportionment of the Feed-In Tariff in Germany is mainly beared by private households while industry is mostly exempted. In general, emphasis should be put on mobilising investments from citizens. Fundamental success criterion for any support scheme is its reliability in terms of continuity to ease investment decisions.

Administrative barriers; information and training needs
The model of quotas should be phased out, as setting fixed quotas prevents the interest in a dynamic or self-sustaining development of capacities, as any investment above the quota targets would result in declining prices for certificates. Often quotas remain too moderate and, in addition, do not offer any guarantee for the development of RES.

Concentrate on taking use of the regional potential for renewable energies and creating responsibilities at regional level to plan and build new capacity for renewable energy production.

Additional efforts are also still needed on awareness raising (everybody can design the energy future by becoming an energy producer), targeted information (choices, costs, support schemes), trainings, setting-up pools of renewable energy experts at local and regional levels.

As the role of consumers should be much more active, more emphasis needs to be given to encourage local authorities to introduce different schemes for refurbishment (whole building envelope) including introduction of renewables.

**Grid integration of electricity from renewable energy sources**

It is necessary to tackle the challenge of integrating much more variable energy generated by RES to the system. Priority should be to balance energy generation and demand at the most local level possible (regional/local/district/building level) and not only at the level of national grids. Gas could be used as bridging technology (special instruments are needed).

**Market integration**

Rules of the liberalised energy market have to be revised to allow the creation of energy service markets. For instance, least-cost-planning is not applicable under current conditions (energy efficiency measures vs. building new generation capacity). The distribution system operators should be allowed to run own storage systems and to cover these costs via user fees.

**Heating and cooling**

Combined promotional instruments will have to be developed with both efficiency standards for newly constructed and retrofitted buildings and covering the remaining heating/cooling demand (at least to a certain percentage) with renewables. Apart from pure regulations this could be implemented via low interest rates and tax reliefs.

Investments in district heating systems is expensive and the payback periods are very long. Solutions such as zero % loans should be proposed to ensure wider development of district heating systems. It is also important to take into account that the maintenance of these systems need to be ensured and in addition to investments the running costs need to be covered.
Renewables in transport

The priority should not be in increasing renewables in the transport sector, but in reducing need for travel and a shift to soft transport modes.

Still, a quota for renewable energies in railways, as this seems to be the most promising for further increasing the share of renewable energy, seems to be the easiest to implement, also as infrastructure already exists.

Electric mobility will be a key issue for private passenger transport and will need a new system to function properly. For example, electricity used by the electric vehicles should originate from renewable energy sources or from energy saving measures and the power supply should be provided via smart grid. Municipal roof space could be used to produce renewable electricity needed for electric mobility.

Further details: Electric mobility - Framework conditions: Climate Alliance’s perspective

Sustainability

The CO2 reduction potential and the overall ecological effect of biomass fuels strongly depend on the basic material and production conditions. The greatest advantages come from fuels that are made of waste and residual material (e.g. methane/biogas).

The cultivation of energy crops in developing countries, where this cultivation competes with the food production, leads to the exploitation of ecologically valuable uncultivated land or to the displacement and the exploitation of local populations (e.g. cultivation of oil palms) which must be viewed critically. Fuels made of staple food like corn or soya must be strictly rejected.

The biomass boom builds the basis for the broad implementation of genetically modified crops in agriculture. The dropping of barrier’s to the use of genetic engineering that is linked to the cultivation of [“powerful”?] crops is problematic and harms especially the smallholder agriculture, which is mainly responsible for the food security in developing countries.

Fuels of agricultural cultivation not only have to meet ecological requirements but also social criteria. The socio-political impact in developing countries has to be analysed with the target to create an internationally accepted quality label, which includes ecological and social criteria equally.

Further details: Fuels from Biomass – Resolution of the General Assembly of the Climate Alliance 2008

Regional and international dimensions

Higher energy prices are important (if not the only) signal to promote energy efficiency. Rules between Members States are less important as the energy should be produced as near to the consumer as possible and priority shoud be given firstly to realising the domestic potentials. Due to limited financial
resources, priority should be given to energy production near the consumer, storage systems and peak demand management.

**Technology development**

- Renewable energy can satisfy the energy needs, but the question of storage needs to be solved
- The system needs to be open to integrate a maximum of renewables (easy access)
- A more decentralised energy system needs to be developed (different infrastructure needed)

As a more decentralised energy system with different infrastructure needs to be developed. Also a change in perception is needed: energy consumers can become energy producers (e.g. energy positive buildings).

It is not necessarily the technology itself that needs development. Investments are needed to start using these technologies on a wider scale. The importance of changing the energy systems to be able to fully integrate the use of renewable energy should be the core line for investments. Technological innovation needs to be accompanied by policies and other initiatives that support the wide use of these technological innovations.

**Conclusion**

In order to demonstrate RES as a real solution considerably more financial resources should be given into RES development and in particular RES application (instead of conventional energy). As EU has set a target to reduce CO2 emissions by 80-90 % by 2050 it is necessary to take further steps now e.g. via new binding targets set for 2030.

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