

Energy Efficiency and Climate Change Policies & Actions in the EU

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Dimensions

- Global/international
 - Regional
 - National
 - Local
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- Links & interdependencies between dimensions
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- Presentation/discussion focus: regional – European Union

EU – types of actions/policies

- Research
 - > Climate change itself (cooperation with UN, OECD etc.)
 - > Global, regional, national, local effects/consequences
 - > Regional, national, local adaptation
- Adaptation actions/policies
- Mitigation actions/policies

Drivers for actions/policies

- Research/scientific evidence
- Acceptance of evidence, predictions, expected consequences

- International cooperation
- International politics

- EU politics & policies = political context
- National politics & policies = political context

Politics & policies

- EU and national political contexts are influenced by
 - > International context
 - > Views & actions of policy-makers and decision-makers
 - > Views & actions of EU stakeholders and national stakeholders

Politics & policies

- Crucially, EU politics and policies are strongly influenced (i.e. positively and negatively) by national (EU Member State) governments
- Importantly, views and actions of national and EU stakeholders and policy-makers & decision-makers are informed not only by climate change, but also other key issues, such as economy, competitiveness etc.

EU climate change mitigation policies & actions

- Greenhouse gas/carbon dioxide emission reduction measures
- Renewable energy related measures
- Energy efficiency improvement measures

EU climate change mitigation policies & actions

- These 3 types of measures have been used for several years
- They were linked to each other prominently/directly through the adoption of the “climate and energy package” in 04/2009
- Importantly, the “package” is not only about climate change
> the measures contained in the package:

“put Europe firmly on the road towards becoming a low-carbon economy and will increase energy security”

EU energy & climate package

- Establishment of legally binding targets to:
 - cut GHG emissions to 20% below 1990 levels by 2020
 - increase the share of renewable energy to 20% by 2020
 - These targets will help to:
 - achieve the EU's objective of improving energy efficiency by 20% by 2020
- > so-called 20-20-20 targets

GHG/CO2 emission reduction measures

- Core of 2009 climate & energy package contains 4 pieces of legislation, 3 of which address CO2 emissions directly
- CO2 emission policies were introduced at earlier dates
 - The 1st European Climate Change Programme (2000) introduced the EU Emissions Trading Scheme – as a cornerstone of the CO2 emission reduction effort
 - The 1st ECCP also brought in car fuel efficiency improvement and energy efficiency of buildings measures

GHG/CO2 emission reduction measures

- The 2nd ECCP (2005) focuses on
 - Strengthening the ETS by addressing aviation (ETS inclusion in 2012) and road transport emissions
 - Developing Carbon Capture and Storage technology
- The 2009 “package” reinforces this through measures that
 - Revise the ETS
 - Trigger national emission limitation targets for non-ETS sectors (e.g. transport, buildings etc.)
 - Establish a legal framework for CCS
 - > Importantly, national governments can promote/subsidise

GHG/CO2 emission reduction measures

- 21% GHG emissions reduction by ETS sectors compared to 2005 by 2020
- 10% GHG emissions reduction by non-ETS sectors compared to 2005 by 2020

= 14% reduction compared with 2005 – 20%/1990

> larger reduction effort in ETS sectors – easier/cheaper

- Importantly, national governments will drive measures in key non-ETS sectors, above all transport & buildings

GHG/CO2 emission reduction measures

- Buildings account for 36% of the EU's CO2 emissions
- Cars, which are only one part of the transport sector, are responsible for 12 % of the EU's CO2 emissions
- Therefore, these sectors are top of the list in terms of non-ETS sectors priorities
- Similarly, they are also top of the list of energy efficiency improvement priorities

GHG/CO2 emission reduction measures

- 1998 the EU accepted a voluntary emission reduction self-commitment by the car industry, including Japanese and Korean manufacturers
- As a result of insufficient performance the EU introduced legislation in 2009
 - > emissions to be capped at 120g of CO₂/km by 2012
 - > clearer labelling of energy efficient labelling
- In 2009 the Commission proposed legislation for vans
 - EU fleet average of 175 g/km will apply as of 2014

Renewable energy related measures

- 2009 “package” contains – apart from the 3 GHG emission measures - 1 piece of legislation that aims at achieving an increase of renewable energy sources in the energy mix
 - > national action plans to set targets and measures
 - > national renewable energy shares differ significantly
- Importantly, national approaches are not only driven by mandatory requirements, but also by economic and technological objectives and opportunities

Renewable energy related measures

- The Commission describes the context of the renewable energy Directive as one that:

“encourages energy efficiency, energy consumption from renewable sources, the improvement of the energy supply and the economic stimulation of a dynamic sector in which Europe is setting an example”

“high-tech industries also stand to gain from new economic opportunities [...]”

Renewable energy related measures

- Technology pillar of the EU energy & climate policy is the 2007 European Strategic Energy Technology Plan (SET)
 - > blueprint for EU to develop a portfolio of affordable, clean, efficient and low emission energy technologies
 - > 6 technologies included: wind, solar, CCS, bio-energy, nuclear, grids
- Delayed by 1 year the Commission in October 2009 published a Communication *“Investing in the Development of Low Carbon Technologies (SET-Plan)”*

Renewable energy related measures

- Communication describes the investments needed to finance the SET plan
- Originally due at the end of last year, the paper was delayed to take account of the changed circumstances following the global financial crisis, the commission said
- Much of the increased funding in the 6 sectors would be channelled to public-private industrial initiatives
- Communication is accompanied by 6 sector "technology roadmaps" for each of the six sectors setting out inter alia the investments needed up to 2020 and the expected returns

Energy efficiency improvement measures

- The 2009 “package” indirectly pushes energy efficiency improvement, but does not address it directly – no specific legal measures
- The EU 2007-12 Energy Efficiency Action Plan (2006) is relevant tool
 - > contains a variety of measures
 - > represents an integrated tool
- Individual energy efficiency measures were introduced already previously

Energy efficiency improvement measures

- Top priority in terms of energy efficiency improvement necessity and potential are:
 - Building sector (40% of EU's energy requirements)
 - Transport sector (26% of EU's energy requirements)
 - Manufacturing sector (25% of EU's energy requirements)

Energy Efficiency Action Plan

- Action Plan aims at achieving a 20% reduction in energy consumption by 2020
- Toolbox includes measures to
 - improve the energy performance of products, buildings and services
 - improve the yield of energy production and distribution
 - reduce the impact of transport on energy consumption
 - facilitate financing and investments in the sector
 - encourage and consolidate rational energy consumption behaviour
 - step up international action on energy efficiency

Energy Efficiency Action Plan

- Achieving the 20% reduction objective will:
 - help reduce the EU's impact on climate change
 - lessen the dependence on fossil fuel import
 - boost industrial competitiveness
 - increase exports of new technologies
 - have positive benefits in terms of employment
- > The savings made will, moreover, offset the investments put into innovative technologies

Energy efficiency improvement measures

- A whole set of measures are being promoted, created, further developed and revised:
 - 2009 revision (incl. scope extension) of 2005 Directive on eco-design requirements for energy-using products
 - Planned 2010 revision (scope extension) of 2002 energy performance of buildings Directive
 - Planned 2010 revision (incl. scope extension) of the 1992 household appliances energy labelling Directive
 - 2009 Regulation on car emission performance standards
 - Planned guidelines on the 2002 Directive on end-use energy efficiency and energy services

Energy efficiency improvement measures

- When looking at the industry sectors, as well as equipment types/products, discussed in the previous slides and thus in relation to climate change only the renewable energy sector has been identified as not being a “problem” but a “solution”
- Looking at some of the sectors and types of equipments/products (i.e. other than renewable energy related) with regard to which Japanese industry is active in the EU they all also have been broadly identified as being a “problem”, e.g. cars/vans; electrical and electronic equipment (EEE) etc.

Energy efficiency improvement measures

- During the last decade or so EEE has been considered as something rather dirty in terms of end-of-life, chemical content, as well as energy consumption
- It was only toward the end of the first decade of the 21st century that the Commission officially started looking at EEE, specifically Information and Communication Technology equipment, software, services as a potential and indeed factual solution to energy consumption related problems
- Some EU governments did so a few years earlier, i.e. in their National Energy Efficiency Action Plans

Energy efficiency improvement measures

- Communications in May 2008
“Addressing the challenge of energy efficiency through Information and Communication Technologies”
- Communication in March 2009
“on mobilising Information and Communication Technologies to facilitate the transition to an energy-efficient, low-carbon economy ”
- Recommendation in October 2009
“on mobilising Information and Communications Technologies to facilitate the transition to an energy-efficient, low-carbon economy”

Energy efficiency improvement measures

- Despite the fact that the European ICT was finally identified as an enabler & solution the Commission Recommendation demands from the ICT sector to *“identify, by 2011, energy efficiency targets that aim to exceed the EU 2020 targets by 2015”*
 - > ICT sector responsible for 2% of EU CO2 emissions & 8% of its electrical power consumption
- The complete set of key demand vis-à-vis the ICT industry’s own impact looks as follows:

Energy efficiency improvement measures

“commits to a progressive decarbonisation process leading to a measurable and verifiable reduction in energy intensity and carbon emissions of all processes involved in the production, transport and sales of ICT equipment and components”

“develop a framework to measure its energy and environmental performance, for which the sector will be expected to contribute the baseline data by 2010

“adopt and implement common methodologies to this end by 2011”

Energy efficiency improvement measures

“identify, by 2011, energy efficiency targets that aim to exceed the EU 2020 targets by 2015”

“works with the European Commission and other relevant public bodies and international organisations in order to develop an auditing and verification framework assessing whether and how energy intensity and carbon emissions reduction targets will be met by individual companies”

Energy efficiency improvement measures

- Concerning the ICT's enabling role/responsibility:

“in close cooperation with the buildings and construction sector identifies ICT solutions to improve the environmental and energy performance of new and existing buildings, and construction and renovation practices, leading to a joint roadmap for large-scale adoption of such solutions”

“in close cooperation with the buildings and construction sector addresses barriers to the wider use of ICT modelling and simulation tools and other relevant applications that facilitate and assist compliance with applicable regulatory regimes governing buildings performance”

Energy efficiency improvement measures

“ in close cooperation with the transport and logistics sector identifies ICT solutions to improve the environmental and energy performance of their services, leading to a joint roadmap for large-scale adoption of such solutions, in coordination with the work carried out under the ITS Action Plan

“in close cooperation with the transport and logistics sector drafts a systematic framework to provide comprehensive, comparable and reliable data on the energy consumption and carbon emissions of freight and transport operations and services to all potential users

ICT for Energy Efficiency Forum

- In response to the Recommendation the EU ICT industry produced a roadmap in early 2010, including the plan and Terms of Reference for an ICT4EE Forum
- Forum will address the Commission demands, primarily through work in 3 WGs
- Forum was established in late February 2010 – by 4 founding associations, including the Japan Business Council in Europe
- WGs will start their work on 27 & 28 April 2010

ICT for Energy Efficiency Forum

- WG1 Measuring the Energy Efficiency of ICT Processes
 - > Development of methodologies, targets, reporting, auditing and verification frameworks
- WG2 Enabling Energy Efficiency in other Sectors
 - > Using technology where there is greatest scope for reductions: transport, buildings and energy supply, based on a snapshot of cities as a systemic way of looking at all sectors

ICT for Energy Efficiency Forum

- WG3 Policy and Technology for the Future
 - >Policy and technology timelines - from current mitigation to future transformation, including a focus on available technologies versus under-deployment, behavioural change, innovation drivers, scenario building and future policy landscapes

ICT for Energy Efficiency Forum

- Forum's focus in terms of policy and compliance is certainly the EU – this applies to all the 3 WGs in terms of work, objectives, targets, deliverables etc.
- WG2 focus similarly is on the EU – largely, but not completely
- However, work on a standardised measurement methodology (WG1) and technology and policy timelines (WG3) need to take into account the EU and the global perspective
- This also applies partially to WG2 (enabling role)

ICT for Energy Efficiency Forum

- Cooperation with international standardisation organisations, other regional and national initiatives and activities, such as the GIPC/Japan, is necessary and welcome
- Equally, in the EU and the Forum there is considerable interest in the experiences and activities in Japan - at government level, industry level as a whole, industry sector and sub-sector level, and individual company level

END