

2015 “Japan-China Policy Research Workshop”

Organized by Ministry of the Environment, Japan (MOEJ)

Co-organized by Energy Research Institute (ERI) and Deloitte Touche Tohmatsu LLC.



EU climate related policies and the international cooperation context *- moving to a low-carbon economy*

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ICF International
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Climate Change in Brief

- **Climate mainstreaming**
 - Key EU targets for 2020 (2020 package)
 - Key EU targets for 2030 (2030 framework)
 - Long-term goal (2050 roadmap)

- **Action towards climate targets**
 - Climate Change Mitigation with Emission Trading System (EU ETS) - ETS as a flagship policy
 - Climate Change Adaptation
 - Climate Finance
 - Support Low Carbon Technologies

- **Others climate related policies**
 - Transport
 - Protection of the Ozone Layer
 - Fluorinated GHG
 - Forests and Agriculture



Key EU targets for 2020 (2020 package)

- 20% cut in **greenhouse gas emissions** compared with 1990 levels
- 20% of total energy consumption from **renewable energy**
- 20% increase in **energy efficiency**
- Promoting "**green**" growth and jobs
- **Four measures**
 - Reform of the EU Emissions Trading System (EU ETS)
 - National targets for non-EU ETS emissions
 - National renewable energy targets
 - Carbon capture and storage
- **Energy efficiency** - for every 1% improvement in energy efficiency, EU gas imports fall by 2.6%
 - An annual reduction of 1.5% in national energy sales
 - EU countries making energy efficient renovations to at least 3% of buildings owned and occupied by central governments per year
 - Mandatory energy efficiency certificates accompanying the sale and rental of buildings
 - Minimum energy efficiency standards and labelling for a variety of products such as boilers, household appliances, lighting and televisions (EcoDesign)
 - The preparation of National Energy Efficiency Action Plans every three years by EU countries
 - The planned rollout of close to 200 million [smart meters](#) for electricity and 45 million for gas by 2020
 - Large companies conducting energy audits at least every four years.

ETS (not including aviation) will contribute a **21% reduction between 2005 and 2020**. The non-ETS sectors will cut their overall emissions by **10%** over the same period.

Key EU targets for 2020 (2020 package)

Financing Energy Efficiency



- The scale of investment needed to meet the EU's 2020 energy efficiency target is estimated at around €100 billion per year.
- **Funding schemes for energy efficiency**
 - Horizon 2020
 - Project Development Assistance (PDA)
 - ELENA
 - European Energy Efficiency Fund (EEE F)
 - Private Financing for Energy Efficiency instrument (PF4EE)
 - European Structural & Investment Funds (ESIF)
- **Initiatives to accelerate Energy Efficiency investments**
 - Energy Efficiency Financial Institutions Group (EEFIG)
 - Investor Confidence Project - Europe



Key EU targets for 2030 (2030 framework)

- **Background**

The 2030 framework as proposed by the Commission in January 2014 builds on the experience of, and lessons learnt from, the [2020 climate and energy framework](#). It also takes into account the longer term perspective set out by the Commission in 2011 in the [Roadmap for moving to a competitive low carbon economy in 2050](#), the [Energy Roadmap 2050](#) and the [Transport White Paper](#). These documents reflect the EU's goal of reducing greenhouse gas emissions by 80-95% below 1990 levels by 2050 as part of the effort needed from developed countries as a group.

- At least **40%** cut in greenhouse gas emissions compared with 1990
- At least **27%** of total energy consumption from renewable energy
- At least **27%** increase in energy efficiency
- **Reform of the EU emissions trading system**
 - A 43% greenhouse gas reduction target in 2030 in the ETS translates into a cap declining by 2.2% annually from 2021 onwards, instead of the rate of 1.74% up to 2020.

Long-term goal (2050 roadmap)

- By 2050, the EU aims to cut its emissions substantially – by **80-95%** compared to 1990 levels as part of the efforts required by developed countries as a group.
- The Roadmap suggests that, by 2050, the EU should cut its emissions to 80% below 1990 levels through domestic reductions alone. It sets out [milestones](#) which form a cost-effective pathway to this goal - reductions of the order of **40% by 2030 and 60% by 2040**.
- **Innovation, green growth & jobs**
 - Up to 1.5 million additional jobs could be created by 2020 if governments used revenues from CO2 taxes and from auctioning of emission allowances to reduce labor costs.
- **Saving energy and resources**
 - On average, the EU could save € 175-320 billion annually in fuel costs over the next 40 years.
- **Cleaner air**
 - Fewer people would suffer from asthma and other respiratory diseases; considerably less money would need to be spent on health care and on equipment to control air pollution. By 2050, the EU could save up to €88 billion a year in these areas.

Long-term goal (2050 roadmap) - continued

- What economic analysis was carried out to prepare the Roadmap?
- Is an 80% reduction by 2050 technically feasible? Is it economically affordable?
- What carbon prices are needed to achieve such reductions?
- Will moving to a low carbon economy reduce the competitiveness of European industry?
- What will happen to non-CO2 emissions, in particular from agriculture, in a low carbon economy?
- What about food prices in a low carbon economy?

Long-term goal (2050 roadmap) - continued

A sectoral perspective

GHG reductions compared to 1990	2005	2030	2050
Total	-7%	-40 to -44%	-79 to -82%
Sectors			
Power (CO2)	-7%	-54 to -68%	-93 to -99%
Industry (CO2)	-20%	-34 to -40%	-83 to -87%
Transport (incl. CO2 aviation, excl. maritime)	+30%	+20 to -9%	-54 to -67%
Residential and services (CO2)	-12%	-37 to -53%	-88 to -91%
Agriculture (Non-CO2)	-20%	-36 to -37%	-42 to -49%
Other Non-CO2 emissions	-30%	-72 to -73%	-70 to -78%

Action towards climate targets – Emission Trading System (EU ETS)



- Operates in the 28 EU countries and the three EEA-EFTA states (Iceland, Liechtenstein and Norway) & Covers around 45% of the EU's greenhouse gas emissions
- Limits emissions from:
 - More than 11,000 heavy energy-using installations in power generation and manufacturing industry
 - Aircraft operators performing aviation activities in the EU and EFTA states
- **Greenhouse gases and sectors included:**
 - Carbon dioxide (CO₂) from
 - Power and heat generation
 - Energy-intensive industry sectors including oil refineries, steel works and production of iron, aluminium, metals, cement, lime, glass, ceramics, pulp, paper, cardboard, acids and bulk organic chemicals
 - Commercial aviation
 - Nitrous oxide (N₂O) from production of nitric, adipic, glyoxal and glyoxlic acids
 - Perfluorocarbons (PFCs) from aluminium production
- **Phase 3 (2013-2020) brings significant changes**



Use of the revenues from the auctioning of ETS allowances



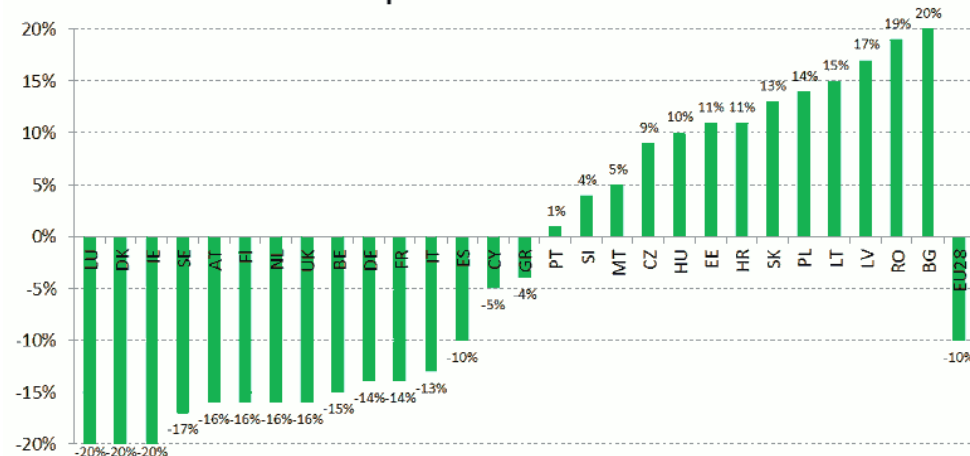
- **€3.6 billion** in 2013, Member States have used or plan to use €3 billion for climate and energy related purposes, primarily to support domestic investments in the low carbon economy.
- Reported revenues (millions of euros, 2013) and used or planned to be used for climate and energy related purposes:

Country	Total reported revenues from the auctioning of allowances (millions of euro)	Used or planned to be used for climate & energy related purposes (domestic and international)	Share used or planned to be used for climate & energy related purposes
DE	790.3	790.3	100%
UK(*)	485.4	485.4	100%
IT	385,9	192,9	50%
ES	346.1	346.1	100%
PL	244.0	128.7	50%
FR	219.2	219.2	100%
EL	147,6	147,6	100%
NL	134.2	134.2	100%
RO	122.7	91.2	74%
BE	115.0	not provided	not provided
CZ	80.7	73.2	91%
PT	72.8	70.4	100%
FI (**)	67.0	33.5	50%
SK (***)	61.7	61.7	100%
DK	56.0	28.0	50%
AT	55.8	29.9	66%
BG	52.6	51.3	97%
IE	41.7	41.7	100%
SE	35.7	17.9	50%
HU	34.6	17.3	50%
LT	20.0	20.0	100%
EE	18.1	9.0	50%
SI	17.7	8.9	50%
LV (***)	10.8	10.8	100%
LU	5.0	2.5	50%
MT	4.5	2.9	64%
HR	0	0	
CY	no reporting provided		
Total	3635.1(****)	3052.1	87% (*****)

Effort Sharing Decision (2013–2020)

- Emissions from most sectors not included in the [EU ETS](#), such as transport (except aviation and international maritime shipping), buildings, agriculture and waste.
- The [national emission targets for 2020](#) have been agreed unanimously. They have been set on the basis of Member States' relative wealth (measured by Gross Domestic Product per capita). They range from a 20% emissions reduction by 2020 (from 2005 levels) for the richest Member States to a 20% increase for the least wealthy one, Bulgaria. Croatia, which joined the EU on 1 July 2013, is allowed to increase emissions by 11%.
- By 2020, the national targets will collectively deliver a reduction of around 10% in total EU emissions from the sectors covered compared with 2005 levels. Together with a 21% cut in emissions covered by the EU ETS, this will accomplish the overall emission reduction goal of the climate and energy package, namely a 20% cut below 1990 levels by 2020.

Member State greenhouse gas emission limits in 2020 compared to 2005 levels



- The European Commission has adopted an [EU Adaptation Strategy](#) and wants all its Member States to adopt national plans to cope with the inevitable impacts of climate change by 2017. A number of Member States have already developed [adaptation strategies](#).
- For example, this includes measures such as:
 - using less water
 - adapting building regulations
 - building flood defences
 - developing crops that cope better in drought conditions

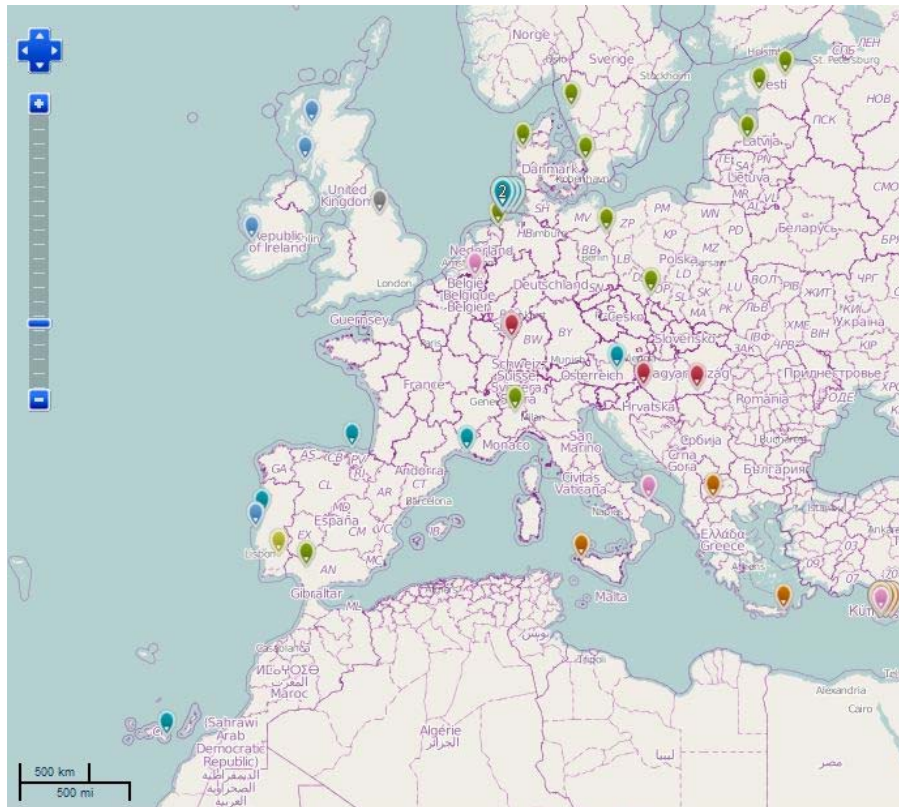
Climate Finance

- At least **20% of the EU's €960 billion budget for 2014 to 2020** should be spent on protecting the climate. This is on top of funding from individual EU countries.
- The EU's development policy will also contribute to achieving the 20% overall commitment, with an estimated €1.7bn in 2014-2015 and €14bn over the years 2014-2020 for climate spending in developing countries.
- The EU finances low-carbon energy demonstration projects from the sale of emission certificates – **NER300**. This includes technologies to trap carbon dioxide from power stations and other industrial installations and store it in the ground, so-called [carbon capture and storage \(CCS\)](#).
- **EU Budget and LIFE** (the Financial Instrument for the Environment and Climate Action)
- **International Climate Finance**
 - The EU's [Global Climate Change Alliance \(GCCA\)](#) initiative provides technical and financial support to developing countries to integrate climate change into their development policies and budgets, and to implement projects that address climate change on the ground. The GCCA is also a platform for dialogue and exchange of experience.
 - 'Fast start' finance: pledged €7.2 billion in [fast start finance](#) over 2010-2012
 - Climate finance continues
 - Using varied sources of financing
 - Making the Green Climate Fund operational



Support low carbon technologies – NER300

- Large-scale demonstration of low carbon energy technologies in Europe and is the world's largest programme in this area.
- Two award decisions have been made under the NER 300 programme. Under the first decision, a total of €1.1 billion was awarded to 20 highly innovative renewable energy demonstration projects.
- In July 2014, under the second decision, €1 billion in funding was awarded to 19 pioneering projects including the first example of a large-scale carbon capture and storage project in the EU.



- Concentrated Solar Power
- Smart grids
- Bioenergy
- Wind energy
- Geothermal
- Ocean energy
- Photovoltaics
- CCS

Support low carbon technologies - Other EU initiatives



- The activities of DG CLIMA are part of a broad network of low carbon technology initiatives in the Commission. Some other major initiatives are:
- the [European Economic Recovery Programme](#), which allocated around € 1 billion to CCS demonstration and €565 million to offshore wind demonstration
- the [Strategic Energy Technology Plan](#) (SET Plan) which aims at accelerating the development and deployment of cost-effective low carbon technologies and builds on an extensive [programme for research, development and demonstration of low carbon technologies](#).
- Deploying low-carbon technology internationally
 - The EU initiated the Global Energy Efficiency and Renewable Energy Fund (GEEREF), an innovative global risk capital fund that will use limited public money to mobilise private investment in small-scale energy efficiency and renewable energy projects in developing countries and economies in transition. It is both a development tool and a contribution to global efforts to fight climate change. It is concrete proof of Europe's commitment to transfer clean technologies to developing countries.

Others climate related policies

- Transport
- Protection of the Ozone Layer
- Fluorinated GHG
- Forests and Agriculture

- Please visit http://ec.europa.eu/clima/policies/index_en.htm for more detailed information.



Thank you!

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