

ENERGY

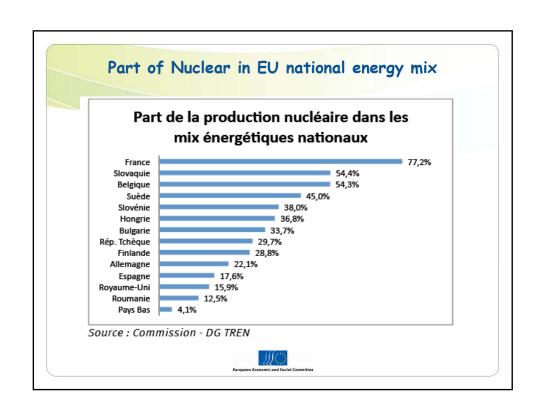
EU and JAPAN face same challenges On Energy:

- Not enough fossile resources
- Needs of autonomy
- Needs of independence of supply
- Production of other sources: nuclear
- Distribution grids
- Security and Safety

And now:

- With the objective of low carbon economies.





In Europe

- Possibilities of common rules
- Relevant level for comprehensive debates and policy
- EU-M.States : Shared competency on Energy
- Responsability to Member States for action.

European Economic and Social Committee

European Strategy "Energy 2020" 5 Priorities

- Achieving an *energy efficient* in Europe
- Building a truly pan-European integrated energy market
- Empowering consumers and achieving the highest level of safety and security
- Extending Europe's leadership in energy technology and innovation
- Strengthening the external dimension of the EU energy market



ENERGY EFFICIENCY 6 main topics

- Energy efficiency: buildings, industry, transport
- Renewable energy
- Mobility: mass transportation
- Recycling, waste management
- Sustainable agriculture and forestry
- Environmental services





The role of nuclear in the EU energy strategy 2020

EU Strategy "Energy 2020" on Nuclear Energy

Priority: Empowering consumers and achieving the highest level of safety and security

- The contribution of nuclear energy to the EU energy mix must be assessed openly and objectively
- Full provisions of the Euratom Treaty to be rigorously applied, in particular on safety





Continuous improvement in safety and security

- Legal framework to be further enhanced:
 - Mid-term review of the Nuclear Safety Directive (adopted on 25 June 2009)
 - Implementation of Radioactive Waste Directive (adopted on 19 July 2011),
 - Redefinition of the Basic safety standards for protection of workers and populations and
 - Proposal on Nuclear liability regimes.
- Harmonisation of plant design and certification at the international level.



Promoting legally binding nuclear-safety, security and non-proliferation standards worldwide

The Commission will develop initiatives aiming at :

- encouraging partner States to make international nuclear safety, security and non-proliferation standards,
- and procedures legally binding and effectively implemented around the globe,
- in particular through reinforced cooperation with the International Atomic Energy Agency,
- and the conclusion of Euratom agreements with key nuclear suppliers and user countries.



Radioactive Waste Directive July 19.2011

Key features:

- highest standards for management of radioactive waste and spent fuel (deeply under earth)
- 4 all waste from generation to disposal
- **♣** no exports
- establishes Community framework Member
 States to provide for appropriate arrangements
 through national programmes
- ♣ Adopted by the Council on 19 July 2011.



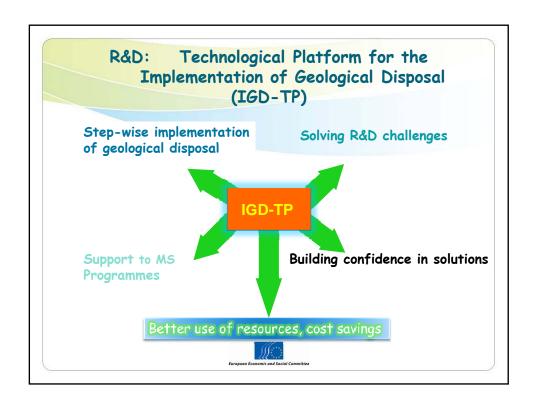
Main bases:

- **LIAEA** Safety Standards
- #Joint Convention on the safety of spent fuel and radioactive waste management

■ Transparency:

- **<u>+</u>extensive stakeholders' consultation**
- *maintains and promotes public information and participation
- **4**M.States agendas to be known before 2015.

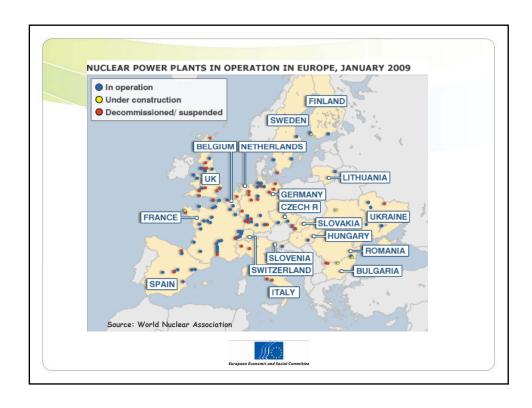




The IGD-TP problems

- Position of IGD-TP vis-à-vis why and how to involve stakeholders
 - who do not whish to endorse the vision, is still unclear
- Struggling with how to interact with a broader range of stakeholders as:
 - NGO's
 - Municipalities and other local stakeholders
 - Regulators and their technical support organisations
 - Uncertainty about whether or not such stakeholder interaction is needed at the international level





Priority: Strengthening the external dimension of the EU energy market

- International cooperation on nuclear has produced good results
- EU to encourage partner states to make all existing international nuclear safety and security standards and procedures legally binding and effectively implemented worldwide
- EU particularly well placed, as it is the first to have taken such action both in the field of safety and security and has specific cooperation instruments for this purpose
- Reinforced cooperation with the International Atomic Energy Agency and the conclusion of Euratom agreements with key nuclear suppliers and user countries.



Priority: Extending Europe's leadership in energy technology and innovation

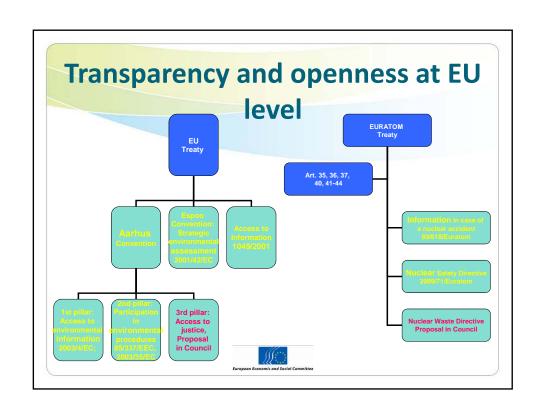
- Europe-wide planning and management are paramount for investment stability, business confidence and policy coherence
- Implement Strategic Energy Technologies (SET) Plan without delay
- Ensure long-term EU technological competitiveness, e.g. on ITER (i.e. next generation fusion reactor)



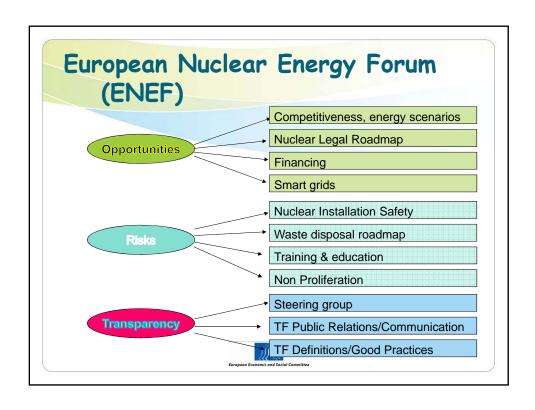
Nuclear today in the EU

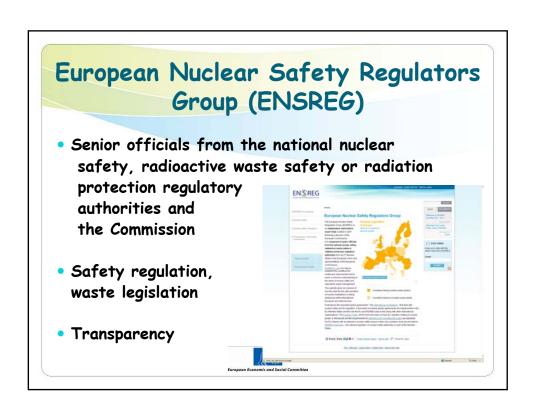
- Over 140 reactors in the EU: almost a third of EU electricity (88% in France), two thirds of low-carbon electricity
- Nuclear contributes to independence, security of supply, competitiveness and sustainability (900 mio tons of CO2 avoided)
- EU nuclear industry in leading role, numbers of jobs
- Increasing interest in new or renewal of nuclear programmes
- Public opinion recognises opportunities and risks, and the vital need for more transparency.











Industrial companies

- Nuclear industry has national champion companies from ancient public monopolies in which governments continue to share capital (F; I; UK)
- They are federated in **FORATOM**European Atomic Forum
- They reached European and international size World leader for electricity production is EDF (French)
- For nuclear fuel and waste treatment ans storage are AREVA (France) & SIEMENS (Germany)



Is liberalized market on nuclear energy dangerous?

 If all the legal bindings, international, european, national, are not respected
 by all actors,

by all sub-contractors

included in and out the NPPs,

yes, the liberalized market becomes speculative,

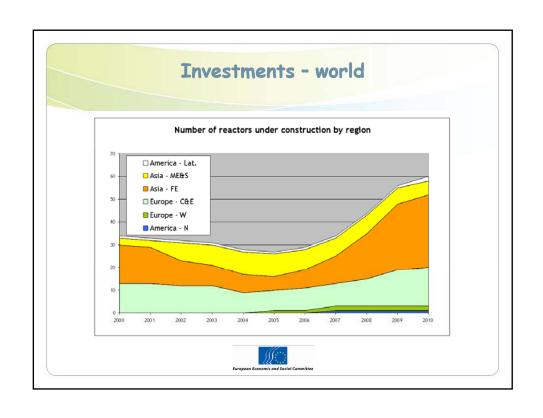
and dangerous for safety of citizens.

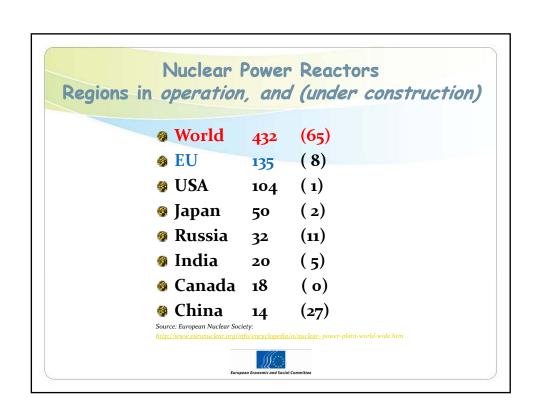
In that framework, the independent regulators are absolutely necessary.



EU role on nuclear energy - in short Highest standards for safety, security and non-proliferation on the basis of the Euratom Treaty (i.e. a separate EU Treaty dealing exclusively with nuclear civil energy) International cooperation agreements Open debate on nuclear's contribution to meet the objectives of the Energy policy.









Fukushima: EU Sequence of Consequences

- 11 March: Tsunami and beginning of Fukushima accident
- 15 March: Extraordinary meeting EC/DG Energy (Commissioner level) with EU Regulators ENSREG

(European Nuclear Safety Regulators Group)

- Conclusion: Needs for "stress tests"
- 21 March: Extraordinary Energy Council with Energy Ministers

 Member States and the Commission invite ENSREG and
 other relevant bodies
- To define the scope and modalities of such "stress tests"
- 24 May: ENSREG and EU Commission reach agreement



EU NPPs stress tests: scope defined by ENSREG and EC

Focus placed on the following issues:

- Initial events:
 - Earthquake
 - Flooding
- Consequences of loss of safety functions from any initiating event conceivable at the plant site:
 - Loss of electrical power, including station black out
 - Loss of the ultimate heat sink
 - Combination of both
- Severe accident management issues:
 - Means to protect from and to manage loss of core cooling function
 - Means to protect from and to manage loss of cooling function in the fuel storage pool
 - Means to protect from and to manage loss of containment integrity

BUT : no decision till now about negative stress tests.

Comprehensive and transparent risk and safety assessment of all EU nuclear plants

Stress tests covering safety

have been launched on 1/06/11.

- The assessment will be based on an amended version of the WENRA (Western European Nuclear Regulators' Association) proposal
- Safety and security will be handled separately, with two different timeframes
- A specific group on "security tests" have been will be established by the EC and the EU MS by 15 July
- Must not lead to a ranking of NPPs.





Stress test implementation Key milestones

- 1 June: national regulators initiate the tests process
- → 15 August: operators carry out reassessments and submit progress reports to national regulators
- → 15 September: regulators consolidate the data into national progress reports → first input to EC.
- → 31 October: operators' final reports
- → 15 November: EC viewpoint on the process EC progress report to the European Council
- → 9 December: European Council
- → 12 December: large conference on nuclear safety organised by EESC
- → End of 2011: final national reports opening the door

for the peer reviews

- → 30 April 2012: completion of peer reviews
- → June 2012: consolidated EC report to the European Council.

European Economic and Social Committee

High Level EC Task Force

for the follow-up of the EU answer to the nuclear accident in Japan

- + Created on 30/05 by EC President Barroso:
 - → <u>To oversee</u> the implementation of the stress tests, with a view to reporting on the process to the next European Council meeting of 9/12/2011
 - → <u>To analyse</u> the radiation protection measures taken so far and propose corrective measures if needed.
 - Membership:
 DG of DG ENER/DG JRC (Chair/Vice-Chair) + other EC services
- → 3 WGps created on the basis of the Mandate:
 - → Stress tests Nuclear Safety
 - → Stress tests Security
 - Radiation protection measures.



Consequences:

* The future of nuclear reactors

not succeeding in stress tests announced by EC on resistance

is not known

following the 27 Ministers decision adopted on last 21 March saying that the participation to these recommanded tests will not be compulsory

and that

final responsability on nuclear policies will remain Member States' competency.

(according to Euratom Treaty1957-8).

AND NO EU-M. States common approach on Nuclear Energy

- EU has a shared with M.St. competency in Energy policy and only since entry into force of Lisbon Treaty, art.4 TFEU (1/12/2009)
- ◆ A general consensus seemed to lead progress towards centralized common energy policy on topics as strategy, infrastructure, efficiency, with a first step on supply in demand to MS to inform EC of all « bilateral energy agreements with third countries » .
- Tragic Fukushima has stopped the process. The shortcomings of the current EU Energy Policy framework became evident.



As we all know

- * Populations living near nuclear plants get in EU a share of the benefits through employment and taxes, and save energy costs.
- * Most nuclear damage occurs at the local level and impacts the local populations and inhabitants, in a 20-50 kms radius, and then distant zones owing to the dispersion of radioactivity.



- ◆ In Europe, where the majority of countries are small, and populated,
 - * about 25% of the 143 NPPs are within a radius of 30 kms of another MS.
 - * and 40% within a 100kms radius.
- That means
 - * liability rules are perceived differently on variation of different risks
 - * debate on ante- or post-regulations on liability is still open
 - * cross-borders aspects are important.



EU: State and Public diverse perceptions about nuclear became obvious

Government and public opinions across the EU were and remain diverse:

Fukushima has led to more rejection/scepticism:
 & fear of nuclear is spreading across Europe

Post-Fukushima:

Under pressure of their Civil Society, several Member States reconsidering their nuclear options



People suffer of lack of information

- Lack of reliable data
 - about the « real » costs of nuclear
- Implications of Fukushima still under assessment with much yet to be reported
- Different pschyco-politico attitudes :
 - * to deliver no informations.
 - * or to deliver informations with a strong confidence
 - * or to prevent at global level (on great medias) or at local level (like with stickers everywhere)

. .





Society Debates

- All the EU countries are renewing at different levels the public debate on civil nuclear energy: philosophical, economical, social...
- Politicians are asked to openly say their choice:
 - In France, the just beginning political campaign running for 2012 Presidency focuses on keep or not nuclear energy and plants, and that topic is a huge case of division into parties and into groups inside parties.
- Members of Organized Civil Society are not unanimous through Europe: even workers unions, some are against, and others in favour.



Non forgettable Civil Society

- The debate on Nuclear energy can't be only a question of specialists, beetween politicians and big companies.
- It belongs to citizens, the voters, and to their representative groups called « civil society »; they must have a say on such an important question related to generations' future.
- The transparency and the dialog concerns
 - * the social dialog for workers in companies and at national level,
 - * and the civil dialog concerns all the citizens and their representative associations (NGOs, NPOs),
 - => to have a clear, transparent and organized debate on risks and benefits of nuclear energy.



Debates

 Questions of employment and know-how, safety and health,

has to be discussed by citizens aware of their choices, to avoid arguing on the moment, for instance like this:

- « If a high-tech nation like Japan is not able to cope with a nuclear meltdown, why should Germany be? »
- OR
- « And why let a few corporations make all the profits when taxpayers are asked to pay billions for an accident in the end? »



ARGUMENTS concerns often: Against: zero risk doesn't exists In favour: Need of security and Climate change health, safety Independence and Protection of safety of supply environnement for future generations Competitivity of Nuclear Stocking the waste during Energy in the structure of costs thousand years: who can be sure? and cheapest costs for users **...** *∭*::

INVESTMENTS

Investers as Citizens need transparency:

NPPs in Europe have been built for 30 years; they are now to be renewed or replaced; and the park-land is always moving.

- Investments are heavy & long term investments;
- So, the visibility is necessary for investers to ensure citizens having electricity at the end.
- In Germany, Parliament choosen to begin the phasing out in 2015;

and after Fukushima, Cancellor Merkel was compelled to change for beginning in 2011.

• And now : How ?



DEBATES ARE AT NATIONAL LEVEL

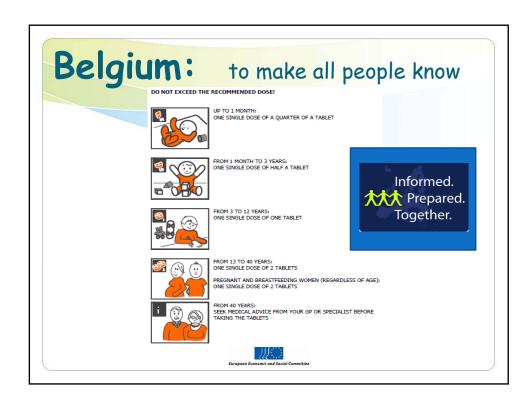
Situation in some EU Member States



Austria

- Austria has prepared its phasing out since 1978
- Austria has forbidden since 1999, by constitutionnal clause, the internal exploiting of nuclear energy
- Austria proposes now to ban nuclear energy imports.
- And ask now EU to stop progressively all the european 143 NPPs.





- In 1999 Belgium had decided to stop ancient reactors aged of 40 years, with no new constructions.
- But, on 15 March 2011, Belgium had announced more resistance tests on its 7 reactors, included the oldest.
- Since 2009, the law should have been revised.
 Still waiting.



Czek Republik

- To maintain nuclear option concerning its 2 NPPs
- But uncertain to maintain the project of building another one under project of cooperation with Russia.



Finland

- Maintains the Nuclear option
- Construction engaged of 2 new NPP is confirmed
- June 2011: Finland called up for 2 others.



France

- 15 March: Prime Minister: to test all French NPPs by independent control authority (ASN)
 - on consequences of flood, earthquake,
 - & pbs on electric and cooling systems
- 24 March: French President confirms nuclear option
- But a commission (after 2012 January) will examine a phasing out around 2040
- EDF Company: to set up a National Task Force to organize in advance how to react to any catastrophy & reexamine conception of all NPPs and stocks.



- France: 80% of french electricity is from nuclear and cheaper than others
- France: Nuclear = 300.000 jobs
- France has got incidents on its NPPs
- Frenchs are very sensitive on that now
- Number of demonstrations have been organized in March, April, June 2011 across the country AGAINST nuclear
- But civil actors disagree on the matter, as unions, and political parties
- Nuclear: one of the main topics beetween political parties for the national campaign for Presidency 2012, and for voters too.



Germany To phase out nuclear for electricity production

- In March 2011, Germany decided to stop 7 most ancient NPPs on 17 on duty.
- In April 2011, decision is taken not to make these 7 return to duty in the future.
- And to phase out completely of Nuclear till 2022, Germany engage heavy investments.



- Before Fukushima: NPP supply 25% of German electricity
- <u>Just after Fukushima</u>: 3-month moratorium and the 8 oldest nuclear plants are put offline
- 30 May: Decision to phase out ALL nuclear plants (17 in total) by 2011 at the latest, opening the way for a real industrial energy revolution
- Objective: renewable sources to provide 35% of electricity by 2020, up from about 13% today (and reach 80% by 2050)
- Germany will become a net importer of electricity (it was an exporter before Kukushima) during the transition period
- <u>Electricity prices</u> hiked in the surrounding countries (Belgium, The Netherlands in particular) by around 10% after Germany's decision
- Higher risk of supply shortcuts (e.g. France often imports electricity from Germany in summer period because of low river levels and lack of cooling water for NPP) and problems of distribution to be expected for renewables (grids..end of networks...).



Case of Germany: some questions raised on the decision of stopping

- Does the German voter have any idea what it means to shut down its nuclear power in just ten years?
 Have German politicians made any effort to tell them?
- Question on electricity prices for users seems to not have been clearly opened.
- Nuclear plants supply 25% of German electricity with virtually no carbon footprint and with a minimum exposure to foreign suppliers of nuclear fuel cycle services unlike the German vulnerability to disruptions in oil and more recently gas supplies.



Italy

- 1987: after Tchernobyl, national referendum: to renounce nuclear = no more NPPs
- 2009-10: Prime Minister try to relaunch nuclear: 4 reactors under construction
- March 2011: a moratory decided for 1, then 2 years
- April 2011 (Parliament) and <u>June 2011</u>: by referendum, Italians choosed to definitely renounce nuclear.



Netherlands

- 1 Reactor = 4% of national electricity
- 1 more under prevision
- Government preparing a phasing out around 2080, to renewables
- And waiting: confirms the choice of a mix



Poland

- No NPP
- Government confirms the will to begin construction of 2 NPPS

in Poland around 2020



United Kingdom

After Fukushima:

- Governement to maintain nuclear option
- To replace progressively NPPs
 on 26 recommandations of
 Independent Control Authority
- July 2011: Parliament has confirmed new NPPs construction Program and localisations
- October 2011: additionnal requests on safety for NPPs by government.



Sweden

Large Policy for Low Carbon Economy

Maintains nuclear option

2009 ended the moratory of 1980, & replace and modernize the 10 NPPs



Spain

- Spain has voted laws to avoid new construction of NPPs
- Spain will revise safety of all plants
- To launch a national survey on sismicity and flood risks



Switzerland (non EU country):

- After Fukushima Disaster, Switzerland has decided to close all its nuclear reactors
 - (5 reactors= 40% national electricity) progressively but definitely till 2019-34, But remains open to research on new technologies.
- 2011: Swiss Government estimates the progressive renunciation will cost more or less 3,8 milliards of swiss franks = 0,7% of GDP. (3,1 milliards of euros).

Prices could increase of min.15% to max. 60%.



EU: European Energy Ministers Council Sept.20.2011

· European Commission:

after announcements by Germany, which has unilaterally decided to phase out all its atomic plants by 2022, EC urges all 27 Member Nations to put collective energy needs above domestic agendas.

• EC pledges for reinforcing electric grids and interconnexions across Europe.



CHALLENGES

The main questions:

- Security and safety
- Radioactive Waste production and storage
- Independence and autonomy of supply (raw materials)
- Infrastructures
- Cross-borders level, and 'international' risks



Other questions

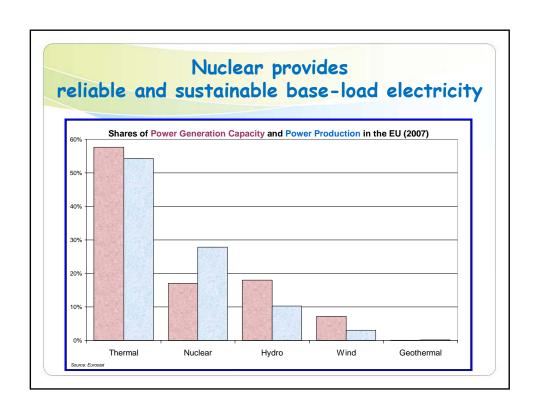
- What kind of energy mix to replace nuclear electricity? GAS need will increase.
- What neighbours to supply Oil and Gas? (Mono- or poly-?)
 - => Political stability of surroundings of EU?
- Distribution grids and risks of disruption.



Societal challenges

- Rate of Employment
- Costs and Investments
- Competitivity for companies and products
- Prices for users, Protection of Environment
- Global crisis: speculation /prices of raw material...





Meeting Low Carbon Economy Challenges

- To protect Environment and Climate
- To avoid: Technological breaks, lose of jobs
- Filling the Gap: Capacity of alternate production?

 and reliable distribution

[when electricity demand increase independently of population or growth, depending of new ways of life]

- Meeting low carbon economy: without nuclear, is return to coal possible?
- Capture of CO²: Where and How?

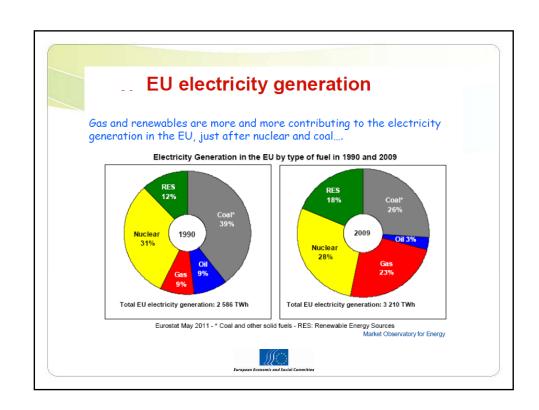


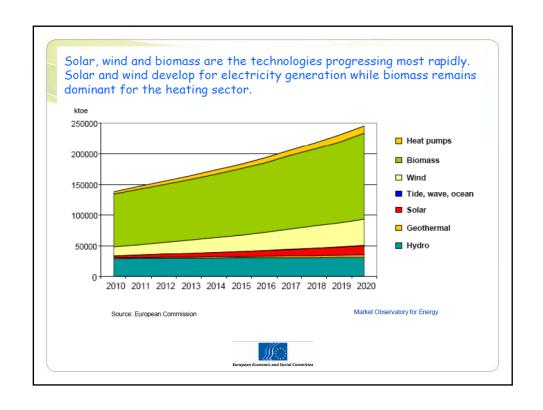
A long term ROAD MAP to 2050

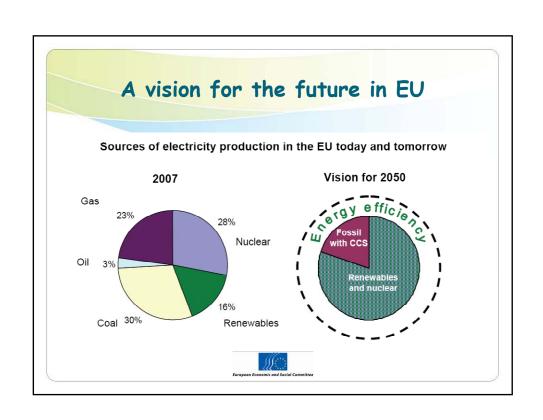
EU COMMISSION established the Road Map with agreement of M.States:

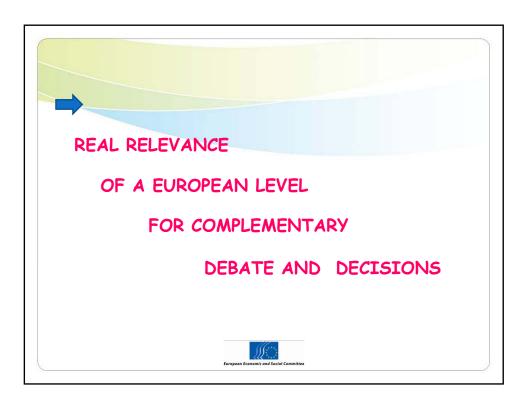
- For progressive transition to low carbon economy
- With ambitious objectives on climate
- To neutral to carbon energetic systems
 - * including nuclear energy
 - * as well as renewables
- Central point: will be choice of the energy mix by the MS and the research on future new sources.











The EESC position

The EESC is in favour of nuclear civil energy, if (among others):

- all challenges are public, and transparently submitted to citizens;
- all legal bindings from european and national levels
 on security and safety are in position
 to be respected, by owners of NPPs
 as well as by all the sub-contracting actors;
- and by all the participants of the chain of value.



The EESC position

- The EESC is in favour of a balanced policy mix on energy supply,
- And ask the Commission to urge the EU and Member States to achieve rapidly

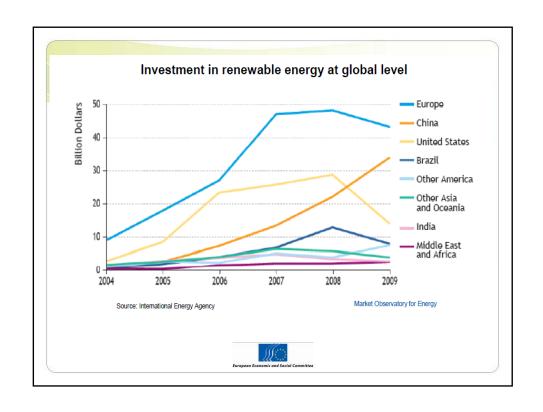
a low carbon economy.



And for that, targets are:

- Energy efficiency: buildings, industry, transport
- Renewable energy
- Mobility: mass transportation
- Recycling, waste management
- Sustainable agriculture and forestry
- Environmental services







- The over-riding priority must be, at international level, to keep global T° increases to below 2 °C
- Minimising our use of fossil fuels is the main area of possible reduction that is under our control
- However, reducing our use of fossil fuels at the international level is a HUGE political, financial and technological challenge
- Fukushima has significantly changed public perceptions regarding nuclear energy in the EU; transparency and public debates are required now.
- A large number of EU "energy experts" still think that nuclear energy should continue playing a role until a significant replacement of fossil fuel is realised: We may ask: HOW? And WHEN?



Nuclear energy carries financial, safety, political and security risks which are not present, to the same degree, with other forms of alternative power

- The EU is active setting the most reliable safety and security standards for its own
- Stress tests:
 - Impact will depend on how they will be implemented (national sovereignty) and how the results will be used
 - Cannot not be an opportunity for greenwashing
- Deciding that nuclear energy must continue (or not) playing a role in the next 50 years cannot be done by the politicians and industrialists alone: civil society must have a say
- The EESC chairs a Working Group on Transparency in the nuclear energy field which aims to support the

fair access to information and people's engagement into nuclear energy debates.

