



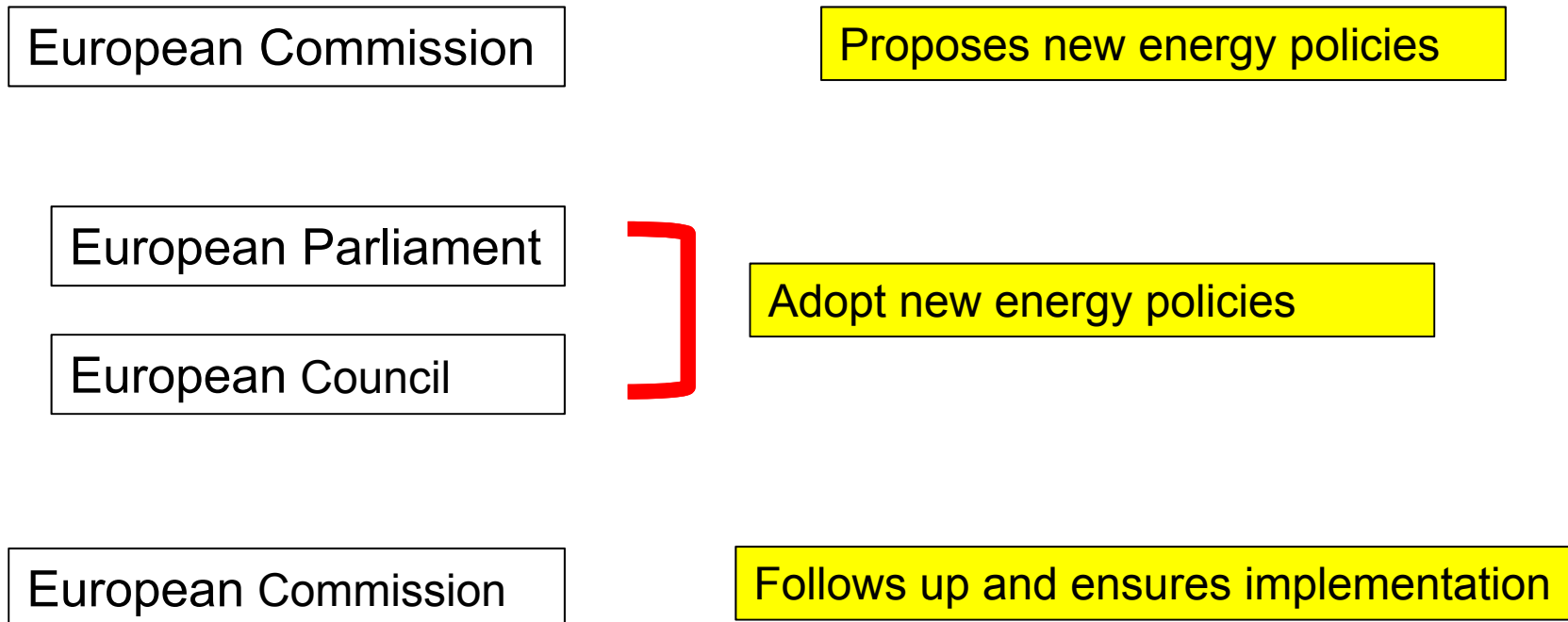
National Academies of science

Up-coming
Energy Policy Issues
in the EU Machine

Scientific evidence to guide EU policy making by Commission, Parliament, Member States

Dr William Gillett, EASAC
Energy dialogue in EU 4/05/2015

EU Policy making process



Who develops EU energy policy ?



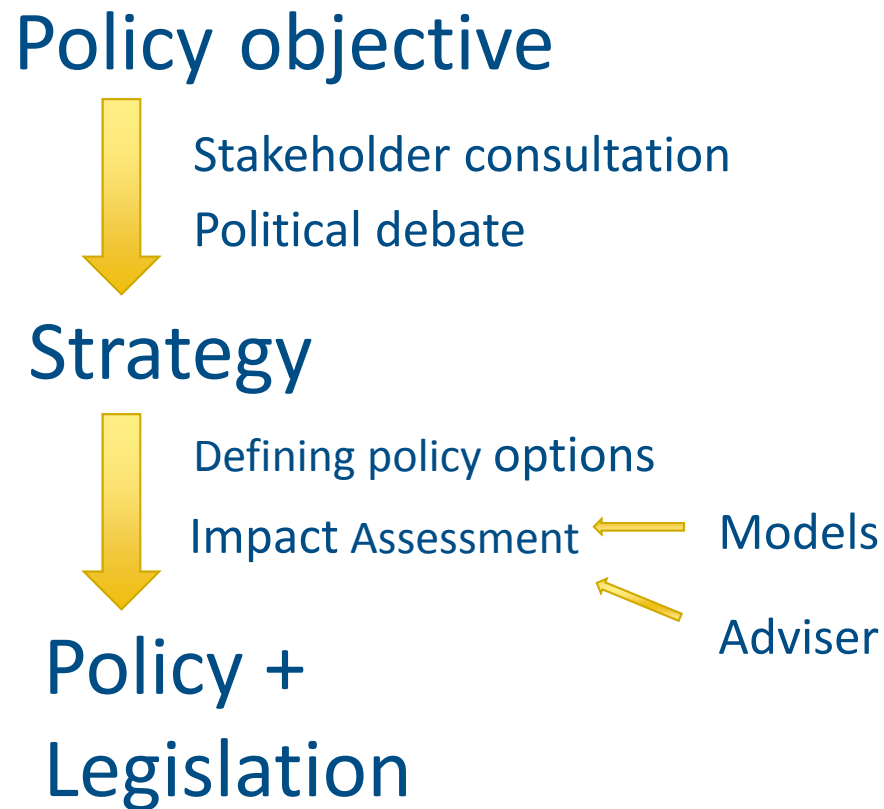
- ✓ DG ENER Energy
- ✓ DG CLIMA Climate action
- ✓ DG SG Secretariat General (“Energy Union”)
- ✓ DG ENV Environment
- ✓ DG AGRI Agriculture and rural development
- ✓ DG GROWTH (Internal market, industry, entrepreneurship, SMEs)
- ✓ DG DEVCO (International cooperation and development)
- ✓ DG MARE (Maritime affairs and fisheries)
- ✓ DG MOVE (Mobility and transport)
- ✓ DG REGIO (Regional development)

Who else influences EU energy policy ?

- ✓ DG TRADE
- ✓ DG CNECT (Communications Networks, Content and Technology)
- ✓ DG COMP (Competition)
- ✓ DG EMPL (Employment, social affairs and inclusion)
- ✓ DG EAC (Education and Culture)
- ✓ DG ECFIN (Economic and Financial affairs)

- ✓ DG RTD (Research and Innovation)
- ✓ DG JRC (Joint Research Centre)

EU Policy / Legislation making process



EASAC

What is it, what does it do ?

- National science academies of the EU member states - (CY, MT, & LU) + (CH and NO)
- **“Science for policy” - use scientific evidence to guide EU policy making**
- *[“Policy for science” – guide the spending of research budgets]*

EASAC projects / reports bring added value :

- EU policy in energy, environment, biosciences
- High quality (peer reviewed, quality assured)
- Validated by academies from all EU MS
- Independent (no commercial or political bias)

EASAC project outcomes

- What emerging scientific evidence could be important for EU policy makers ? (*eg: changes in energy supply, demand, technology, market, financing, IT, etc.)*)
- What independent scientific evidence could help policy makers to balance conflicting messages from different lobby groups ?
- What new developments might need to be taken into account in future energy policies and legislation ?

Energy Policy Challenges and Opportunities



GHG emissions, Climate change



Growing import dependency



Affordable (volatile) energy prices



Jobs, competitiveness

EU energy sector is changing - renewable energy is mainstream



Why? Strong policy and RES Directive !

- Support schemes
- Removed administrative barriers
- Guaranteed grid access

27 GW of new EU generators (2014)

- **Wind 12GW, PV 8GW, Bio+waste 1GW**
- **Coal 3.3GW, Gas 2.3GW**

What else is changing ?

- Energy demand is falling (EE, and changing industries)
- Increased concern about energy security (*EU imports 53% of energy consumption, costing 1B€ per day*)
- Consumer resistance to growing support scheme costs
- Shale gas in USA is pushing down global fuel prices
- Asset values of utilities reduced by nuclear phase out
- Fossil fuel reserves in EU are running low
- Higher decarbonisation commitments (climate change)

Evolving EU policy framework



- Energy Union (Feb 2015)
- Policy framework for climate & energy 2020-30 (Jan'14)
- Report on energy prices and costs (Jan 2014)



- Guidance on state intervention in elec' markets (Nov'13)
- Energy Efficiency Directive (Oct 2012)
- Energy Roadmap 2050 (Dec 2011)
- Europe 2020-smart sustainable inclusive growth (2010)



- EU Third energy package (Sept 2009)
- RES Directive (Apr 2009) – prog' reports 2012, 2014
- RES Electricity Directive (2001)

Novel elements of EU energy policy



Inter-connections

Capacity mechanisms

RES support schemes

Cooperation mechanisms

EE and demand response

Vice President Maros Sefcovic



Miguel Arias Cañete Climate Action & Energy





Towards an

Energy Union



1. ENERGY THAT IS SECURE FOR ALL CITIZENS

🔋 TODAY:

The EU is the largest energy importer in the world, costing **€400 billion/year**, or more than **€1 billion/day**.

Over **10%** of the **EUROPEAN POPULATION** cannot pay their energy bills.



🔋 WITH THE ENERGY UNION:

SECURE ENERGY in every member state, to every citizen. Based on **SOLIDARITY AND TRUST**.

Speaking with **ONE VOICE GLOBALLY**.



2. ENERGY THAT FLOWS FREELY ACROSS BORDERS

🔋 TODAY:

Markets are largely national. This means **LESS CHOICE, LESS RESILIENCE, HIGHER PRICES.**



Some EU countries are **ENERGY ISLANDS.**
ENERGY INFRASTRUCTURE is AGEING.



🔋 WITH THE ENERGY UNION:

Fully **INTEGRATED MARKETS.**



BETTER DEAL for consumers.

3. ENERGY-EFFICIENT PRODUCTS, TECHNOLOGIES, JOBS AND SKILLS OF TOMORROW

🔋 TODAY:

75% of housing stock is **ENERGY INEFFICIENT.** **94%** of transport relies on oil.



🔋 WITH THE ENERGY UNION:

STRONG, COMPETITIVE COMPANIES across Europe deliver the energy efficient products, technologies, jobs and skills of tomorrow.



ENERGY EFFICIENCY IMPROVED by at least **27%** by 2030.

4. AN ECONOMY THAT IS CLEAN, LOW CARBON AND ENVIRONMENTALLY FRIENDLY

🔋 TODAY:

CLIMATE CHANGE leads to severe, pervasive and irreversible impacts for the world.

Urgent need to limit the rise in global average temperature to below **2°C**.



🔋 WITH THE ENERGY UNION:

RENEWABLE ENERGY boosted, representing at least **27%** of the energy consumed in the EU by 2030.

Greenhouse gases cut by at least **40%** by 2030.



5. NEW TECHNOLOGY FOR TOMORROW'S ENERGY

🔋 TODAY:

The EU has **LOST GROUND** on clean, **LOW-CARBON TECHNOLOGIES**.



🔋 WITH THE ENERGY UNION:

LOWER BILLS for EU citizens.



EUROPEAN COMPANIES to be world leading on renewable and low-carbon technologies.



 **#EnergyUnion**

European Council Conclusions on the Energy Union (19 Mar 2015)



While emphasising the importance of all dimensions of the Energy Union, today, the European Council focused on some of the aspects and called for:

h) developing an energy and climate-related technology and innovation strategy, including for example on the next generation of renewables, on electricity storage, and carbon capture and storage, on improving energy efficiency in the housing sector as well as on sustainable transport;

Evidence → Messages for policy makers

- Electricity, gas, oil, coal, nuclear policy
- Renewable energy policy, Energy efficiency policy
- EU 2020 (growth and jobs), EU 2030, 2050 and beyond
- **“Energy Union” policy (climate and energy)**
 - Energy security - electricity and gas supply security
 - Energy infra-structure (10% inter-connection targets)
 - Modernise EU energy markets (competition across borders)
 - More transparent costs and prices (affordable for citizens)
 - Decarbonise energy sector (-80/95% of 1990 levels by 2050)
 - Energy for transport (e-mobility, alternative fuels, ..)

What has EASAC already done ?

- ✓ Shale gas extraction 13.11.14
- ✓ Management of spent nuclear fuel and its waste 30.07.14
- ✓ Carbon Capture and Storage in Europe 16.05.13
- ✓ "Smart villages" initiative 23.01.13
- ✓ Current status of biofuels in EU 13.12.12
- ✓ Systems approaches to inform EU policy making 10.12.12
- ✓ Concentrating solar power 07.11.11
- ✓ Transforming Europe's Electricity Supply 11.06.09

What is EASAC doing now and what will it do in the future ?



Started in 2015

- Dedicated Electricity Storage
- Sustainable Forests

To begin in 2016

- Energy for transport ??
- Other ??

EASAC team is very small, but can help scientists from European Academies to draft reports for EU policy makers, and to promote messages which are based on objective, independent scientific evidence!

Thank you !