To and beyond 2020: Industrial Energy Efficiency Policies and Low Carbon Roadmaps for Europe

eceee Seminar: The Challenge of the IEA World Energy Outlook

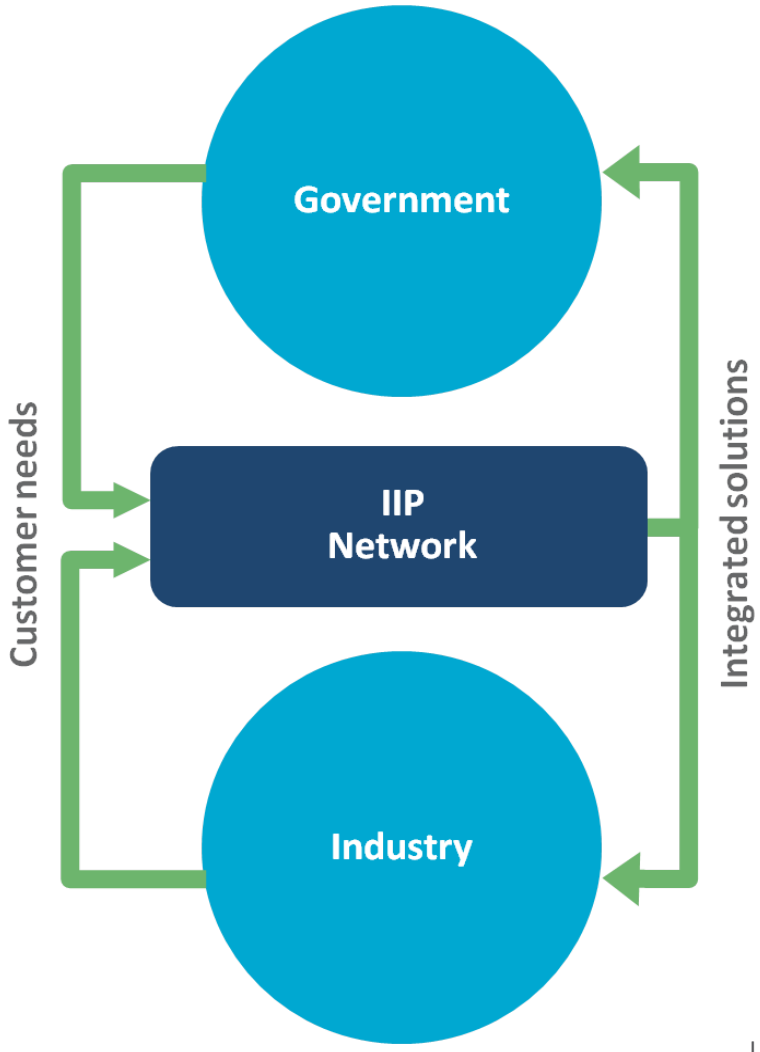
November 21, 2012, Brussels

Amélie Goldberg and Julia Reinaud

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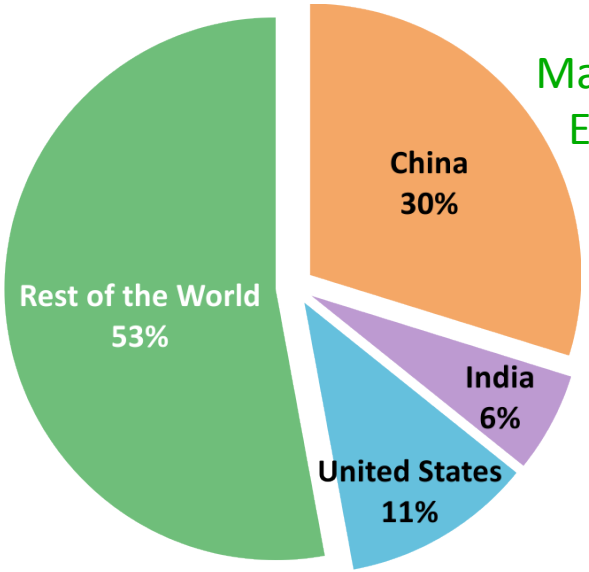
IIP Mission

To improve industrial energy efficiency and productivity by providing industry and government decision makers with best practices to implement effective policies, technologies, and financial approaches.



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Strategic Focus



Major Industrial Energy Consumers



Energy-intensive industries, such as…



Cement



Chemicals



Iron & Steel

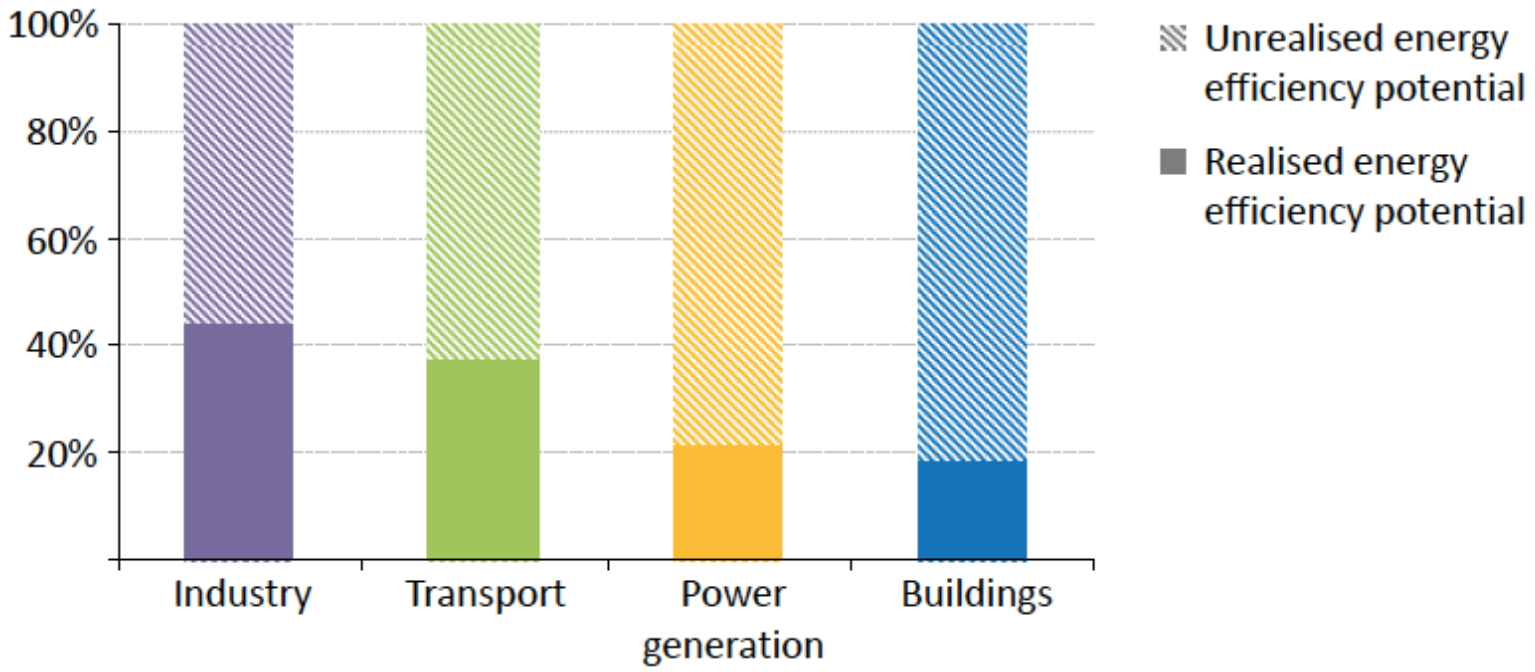
Key points from the 2012 World Energy Outlook

- Current Policies Scenario: points to temperature rise of 5.3 °C
- New Policies Scenario: points to temperature rise of 3.6 °C
- Efficient World Scenario: ?
- 450 Scenario: 2°C by design

- Industry has huge energy efficiency potential (next slide)
- But energy demand to 2035 is primarily driven by non-OECD
- Energy demand over 2010-2035 in the NPS:
  - 1.2%/year globally
  - 2.2%/year in Asia
  - -0.1%/year in Europe

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Energy efficiency potential used by sector in the New Policies Scenario



Two-thirds of the economic potential to improve energy efficiency remains untapped in the period to 2035

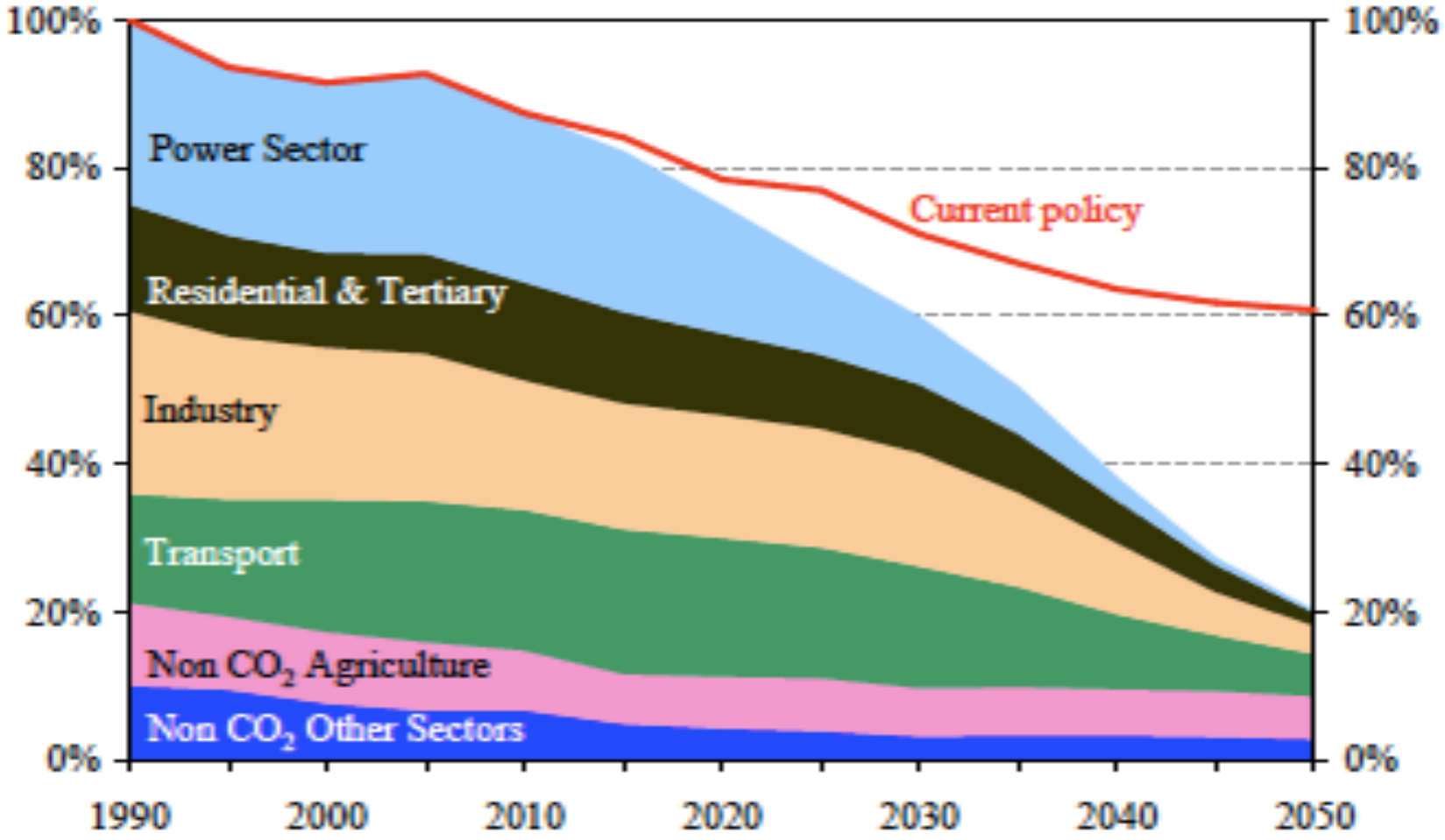
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Source: IEA, WEO 2012

What are Europe's Goals to and beyond 2020?

- 2020 20% energy savings target & 20% GHG target
- EU "Roadmap for moving to a competitive low carbon economy in 2050"
  - Overall 80% GHG reductions, and 83-87% for industry possible by 2050 (based on 1990 levels)
  - EC analysis shows that GHG emissions in industry could be reduced by 34-40% in 2030
  - MS encouraged to develop their own low carbon roadmaps
  - Sectors invited to develop sector-specific roadmaps

Europe's CO2 Trajectory to 2050: Industry plays a key role



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Source: EC low carbon roadmap presentation

Where will the needed GHG reductions in industry come from?

- Energy efficiency can realise 50% of untapped economic potential
- Advanced industrial processes and materials, innovative products, materials recycling
- To reach 450 scenario/ Europe's 2050 goals:
  - Breakthrough technologies
  - Effective use of CCS technologies could account for some 15% of the reductions required to 2030 and more beyond

Energy efficiency is key… at least until 2020

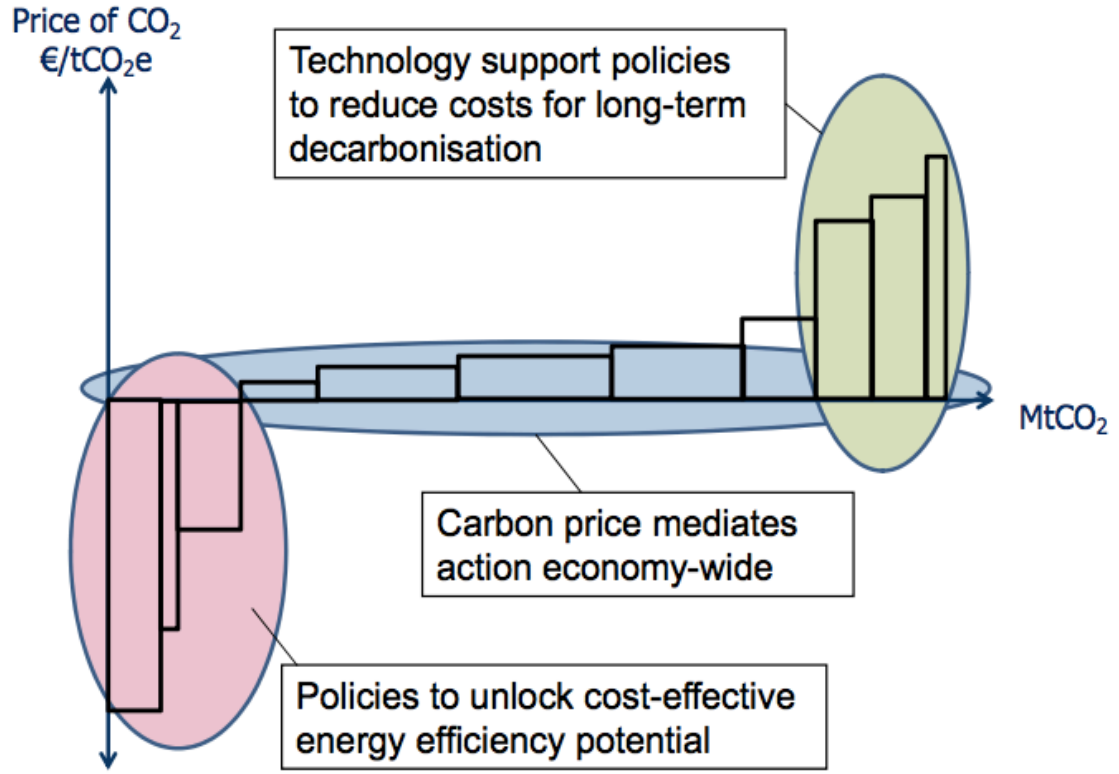
- Energy efficiency is the single most important contribution, at least until 2020 (EC, IEA)
- EE can delay “lock-in” of CO2 emissions permitted under a 2 °C trajectory – which is set to happen in 2017 – until 2022 (WEO)
- EU Current policies only result in 10% energy efficiency (EC)
- New Energy Efficiency Directive & other initiatives to push this to 20% (15% EED + 2% transport standards + 3% eco-design)

Industrial energy efficiency policies to 2020

- EU ETS & EC proposals to reform carbon market
- Energy Management Programs & Voluntary Agreements
  - Not at the EU-level but present in many member states (Denmark, Sweden, Ireland, Finland, Netherlands)
  - Adoption of energy management systems (EnMs) combined with incentives (Germany, France)
- Energy Efficiency Directive
  - assess potential for high efficiency cogeneration by December 2015.
  - Large companies subject to energy audits, with incentives for SMEs
  - Companies with certified EnMS will be exempt from audits.
  - Obligation on energy suppliers to deliver an annual 1.5% energy saving among end-users

But much more integrated policy mix required beyond 2020

Figure 1 The core policy mix: a carbon price, energy efficiency and technology policies



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Source: IEA, Summing Up The Parts (November 2011)

Moving beyond 2020….

- Current policies would only lead to approx. 40% reduction by 2050
- Discussions are beginning on low-carbon roadmaps for MS and sectors
- Some MS have adopted low-carbon roadmaps (SW, DK, NK, UK, GE, FR)
- Early stages!

Industry Low-carbon Roadmaps to 2050

- Paper sector (CEPI)
- Steel sector (Eurofer)
- Cement (CEMBUREAU)
- Chemicals sector (CEFIC)
- Ceramics sector

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Roadmap implementation

- Breaking down the Roadmaps in “manageable” implementation steps:
  - Technology support – not one technology fits all sectors
  - Actions and timeframes
  - Stakeholders – innovative!
  - Governance
  - Financing – million dollar question!
- New cooperation models
  - Systems integration & eco-Industrial parks
  - Collaborate outside the sector e.g. with end-use sectors (buildings / power), and universities

Supporting transformational change beyond 2020

- Long term certainty for industry and investors that GHG mitigation is a sustainable goal
- ETS and sustainable carbon market
- Integrated EU industrial policy
- RD&D (stimulate, pilot, demonstrate, finance) and support access to market for breakthrough technologies
- Training: skilled work force
- Public funding to leverage private sector investment, e.g., through public-private partnerships (PPPs, e.g. EBRD models), new innovative financing models and products (e.g. risk-sharing guarantees).

EU action under the Efficient World Scenario & 450 Scenario

Efficient World Scenario

- Europe takes action to realise full economic viability and remove market barriers (focus on techno-economic potential)
- Application of commercially viable BAT, energy system optimization, process, CHP, phasing out outdated capacity
- Importance of energy management programs, equipment standards, training, fiscal incentives

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450 Scenario

- Trajectory similar to EWS up to 2020: energy efficiency plays core role
- Beyond 2020: structural changes & new production systems
- Industrial low carbon roadmaps of prime importance
- New cooperation models, RD&D, focus on products rather than process, eco-industrial parks
- Breakthrough technologies, CCS, use of biomass

Thank you

Amelie.goldberg@iipnetwork.org

Julia.reinaud@iipnetwork.org

www.twitter.com/iipnetwork

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