EU Energy Strategy and its Implications for Ukraine

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Structure

1. EU Energy Strategy
2. Expected Consequences
3. Implications for Ukraine
4. Conclusions

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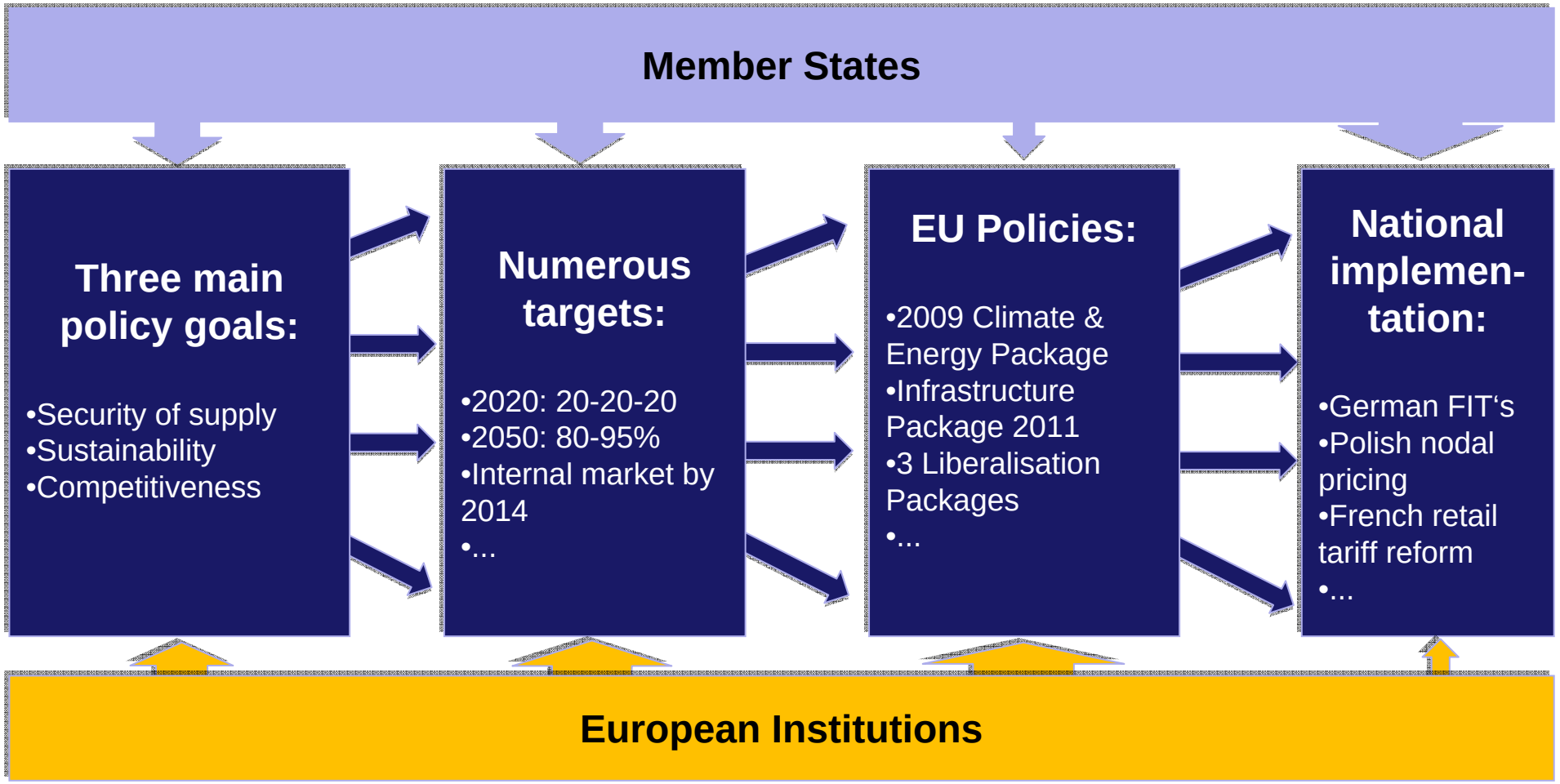
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1. EU Energy Strategy

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EU energy policy making



⇒ Varying influence of European institutions at the individual stages of EU policy making

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What is the EU energy strategy 2011-2020

- “Energy 2020: A Strategy for competitive, sustainable and secure energy”
- Current status: A Commission communication + conclusions by EP, European Council & Energy Council
- Unsurprising document: bundles legislation in-progress
- Five priority areas:
  1. Achieving an energy efficient Europe
  2. Building a pan-European integrated energy market
  3. Empowering consumers and achieving the highest level of safety and security
  4. Extending Europe’s leadership in energy technology and innovation
  5. Strengthening the external dimension of the EU energy market

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Restate goals of the „green paper“

- 20% renewables
- -20% emissions
- -20% energy consumption

+ long term commitment to 80-95% emission reduction by 2050

But, the EU has a mixed record in sticking to its targets (e.g., Energy efficiency, Lisbon Strategy)

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2. Consequences

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1. Energy Efficiency

Implications of some ideas presented in the Strategy:

- Buildings and transport identified as sectors with biggest saving potential => decreasing demand for oil and gas
- Supply side: energy efficiency criteria to be included in authorization of generation capacities => origin of electricity might play an increasing role
- Obligations to energy suppliers and retailers to introduce energy saving tools for customers (smart meters, white certificates etc.) => electricity markets will become more complex

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2. Integrated energy market

Implications of some ideas presented in the Strategy:

- Implementation of the 3rd energy package including the institutional framework (ACER, ENTSO-E); European market integration by 2015 => increasing role of markets as compared to bilateral arrangements
- Ensuring necessary infrastructure investments (strategic priority projects, grid development); => European energy market will become deeper and prices will converge
- Assessment of the effectiveness of the RES Directive in 2011 => potential changes in RES legislation, but continued emphasis on RES deployment (20%)

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3. Consumers' protection, safety and security

Implications of some ideas presented in the Strategy:

- Legal framework for nuclear safety and security, including nuclear waste + European approach on nuclear liability regimes => possibly stricter rules and higher cost of polluting and dangerous generation

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4. Making a technological shift

Implications of some ideas presented in the Strategy:

- European research, development and demonstration projects on essentially all energy technologies => no prioritisation of particular decarbonisation-technologies

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5. External dimension of the EU energy market

Implications of some ideas presented in the Strategy:

- Integrating energy market and regulatory frameworks with neighbouring countries (Energy Community Treaty) => export of rules and investment security, make freeriding on costly EU rules more difficult
- More diversification of supplies => less reliance on individual partners

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3. Implications for Ukraine

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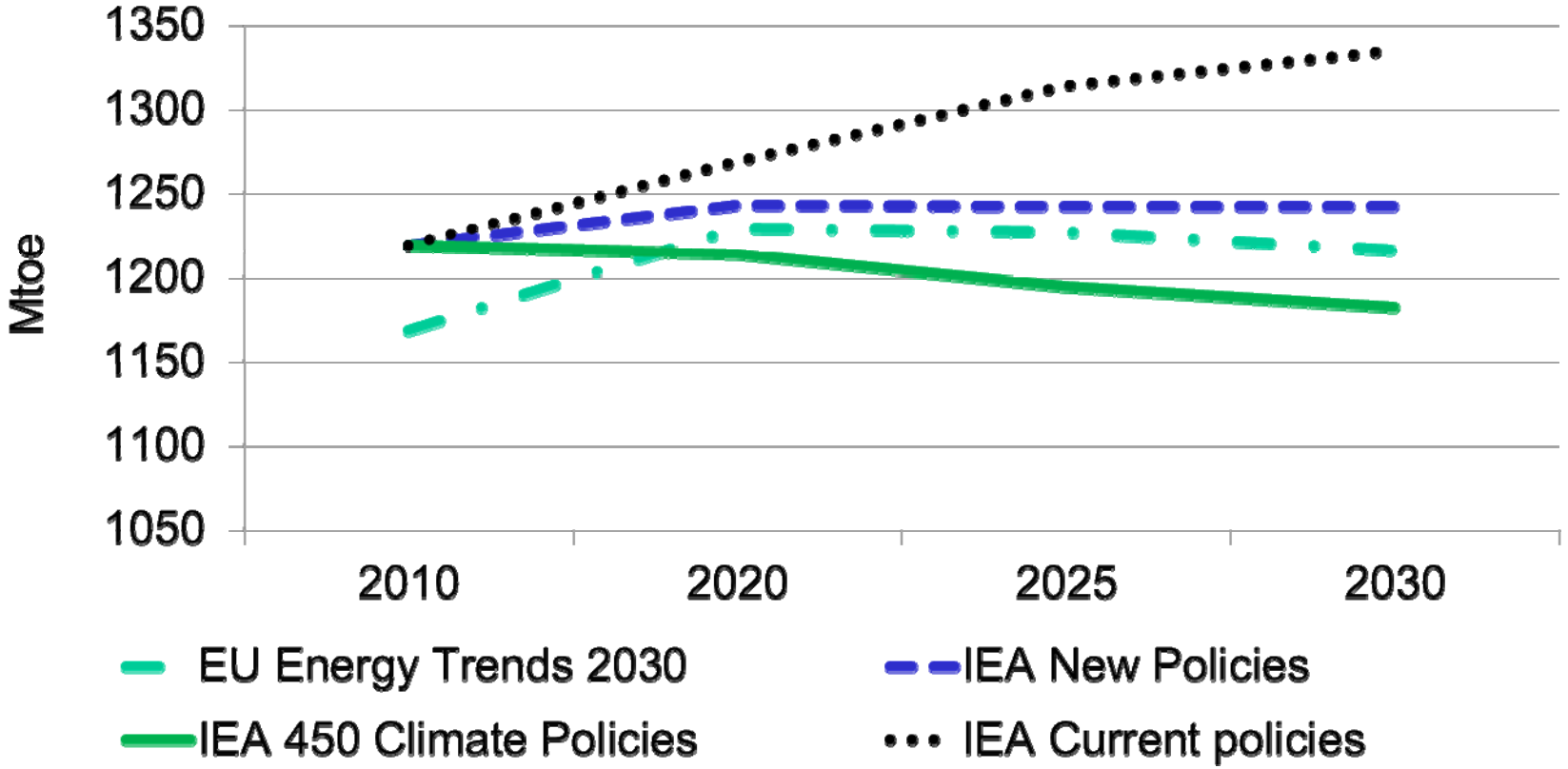
Implications of higher EU emission cost

- Europeans will become more aware of carbon leakage
- Trading „dirty“ (carbon-intensive) energy with Europe will become more difficult
- trading „clean“ (carbon-free) energy will become more profitable
- “Dirty” energy will become cheaper
- Outlook:
  - Also life-cycle-emissions of gas might become an issue (leakage from pipelines constitutes a significant GHG-emission) => pipeline modernization might be required
  - The EU is linking its EU Emission Trading System to the system in Switzerland and is looking ahead ...

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Implications on Energy Demand



- Energy efficiency: The two main scenarios (EU Trends and IEA New Policies) foresee a flat demand development until 2030.

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Implications on the electricity market – 1/3

Higher electricity prices

- Increasing demand through electrification
- Increasing cost of carbon (today 15€/t)
- Higher feed-in of expensive RES

–Direct feed-in cost

–Higher cost of networks

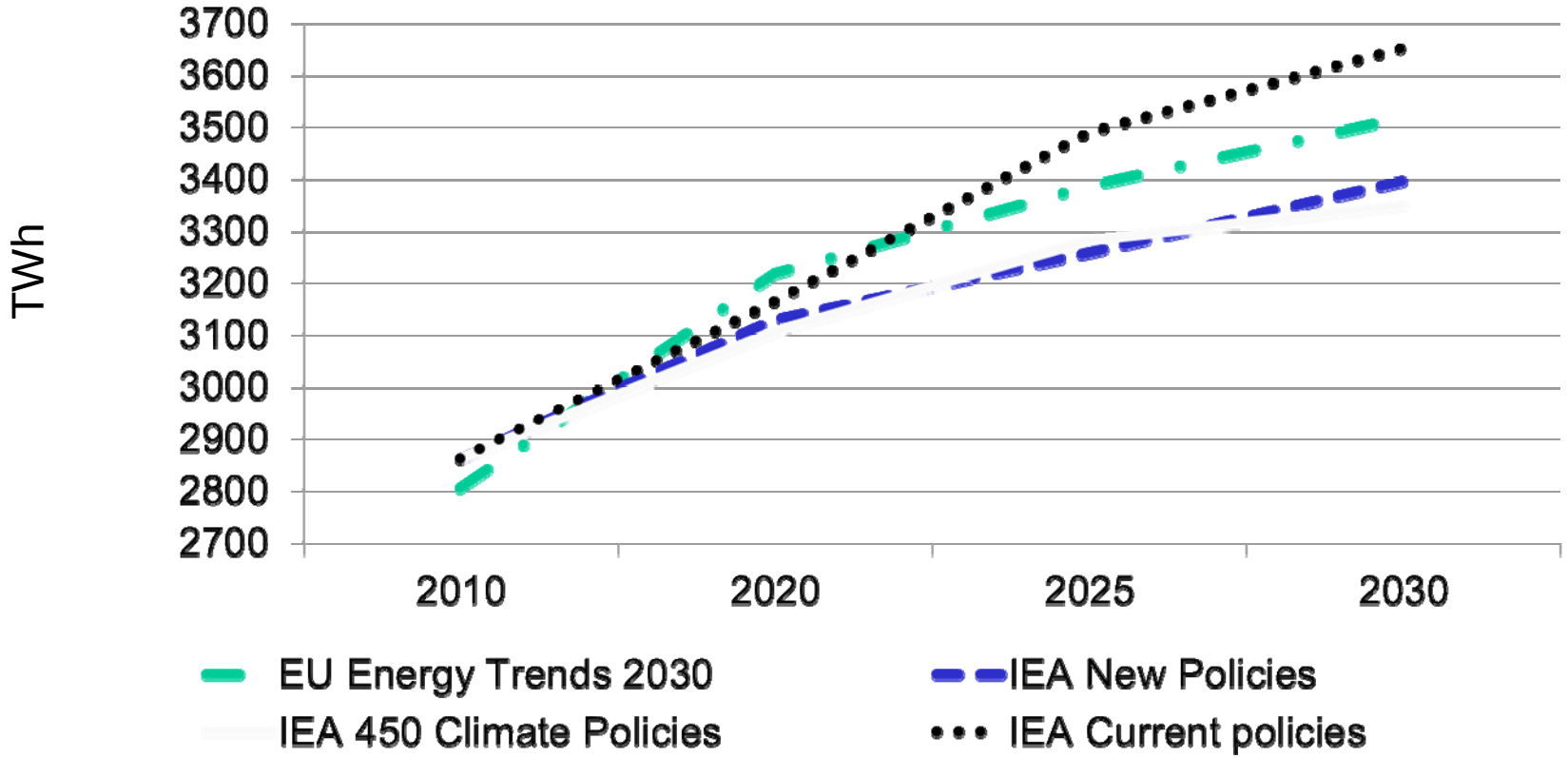
–More back-up capacities needed

- Increasing requirements on conventional generators (LCPD, IPPD, CCS-ready, …)
- But, technology might reduce cost

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Electricity Demand



Strong increase of electricity demand (+20%)

=> Increasing electricity prices

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Implications on the electricity market – 2/3

More volatile electricity prices

- Intermittency of PV and wind
- Frequent switches between fuels
- Europe will require overcapacities in many hours
  - ⇒ very low electricity prices in these hours
  - ⇒ Unclear, whether capacities should be compensated by very high prices in tight situations or by „capacity mechanisms“

⇒ either, very volatile electricity prices

⇒ or, a new market for capacity will become important

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Implications on the electricity market – 3/3

Convergence of electricity prices

- More transmission lines
- Convergence of rules
- Prices in the center and at the periphery converge

Higher electricity prices
+ More volatile electricity prices
+ Convergence of electricity prices
= electricity prices at the periphery will become more volatile and higher

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Implications of higher and more volatile electricity prices

=> good news for exporters of cheap and flexible electricity

- But EU market design is going to evolve => trade with the EU will only be possible through intermediaries

=> full trading benefits only to be expected from making rules compatible

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Implications on the gas market

Flat gas demand

- Energy efficiency
- Increasing share of RES in electricity, but decreasing share of coal (unclear: nuclear)

Increasing gas supply

- New pipelines
- LNG
- Unclear: Arab world

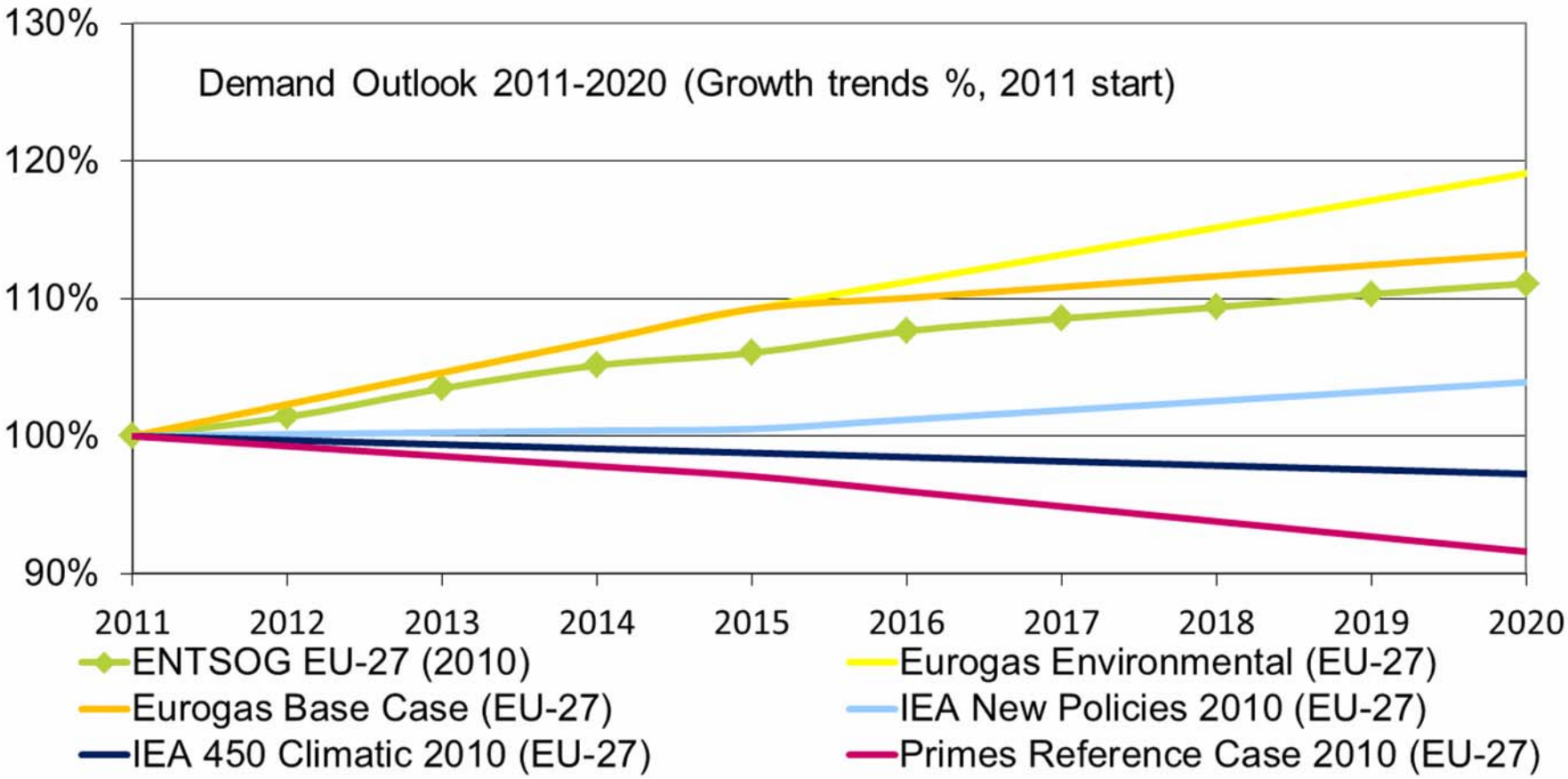
Converging prices

- New pipelines
- Third package

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Natural gas demand



More uncertain and flatter demand development for gas (-5% to +15%)

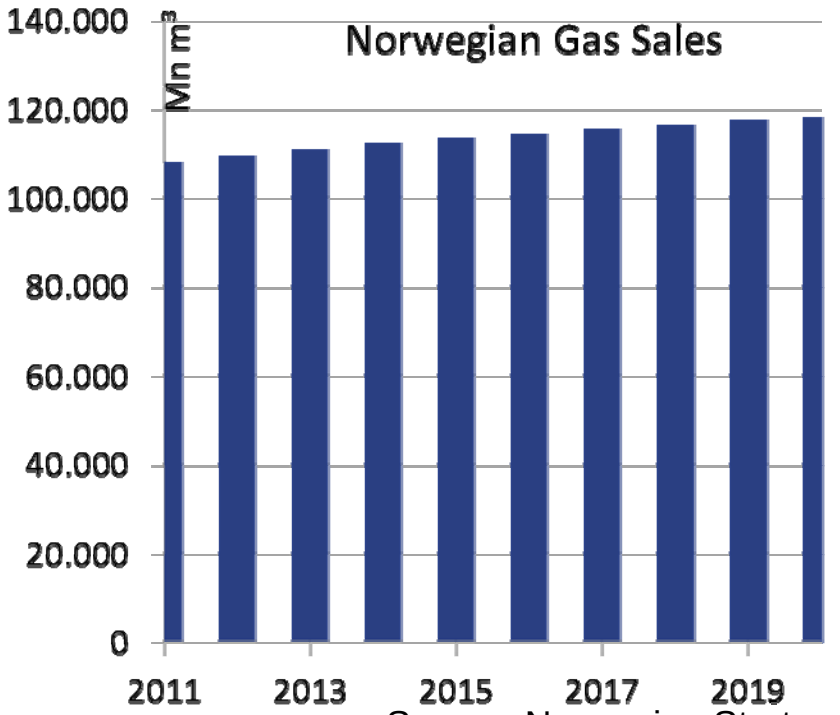
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Gas supply



Source: Russian Strategy according to ENTSO-G



Source: Norwegian Strategy according to ENTSO-G

- Russia intends to export more to Europe and to the CIS
- Norway intends to increase exports
- US intends to export

+ potential EU shale

=> no gas shortage

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Implications of flat gas demand and increasing supply diversification

- This will reduce the importance of individual pipelines
- This will thus lower the profitability of those
- However, the EU seems committed to pay a premium for keeping options open (some EU interest in modernization of the Ukr. Pipelines if the conditions are fair)
- Gas price at the European market will become more determined by the world market
  - if Asia goes for gas => European gas prices will increase => a gas importing Ukraine will suffer, but a gas exporting Ukraine will benefit.
  - If Asia goes for CCS, nuclear or renewables => European gas prices will decrease => a gas importing Ukraine will benefit, but a gas exporting Ukraine will suffer.

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Three Strategic options for Ukraine

1. Exploit (free-ride)
2. Stand-by
3. Cooperate

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1. Exploit the EU Strategy

- Sell cheap and “dirty” electricity to Europe, i.e. seek to increase exports
- Will become difficult if EU gets stringent on “carbon” imports (“*ensure a level playing field for EU power producers vis-à-vis producers outside the European Economic Area*”)

- Benefit: potentially large „legal arbitrage“ gains
- Risk: trade, investment and technology transfer restrictions

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2. “Stand by”

- Balk at integration efforts, possibly under scarcity of funds
- Benefits:
  - Fewer investments and reform efforts required
  - Falling power prices as “dirty” electricity becomes in excess in western CIS
- Risks:
  - The Ukrainian market remains over-regulated harming energy efficiency and interests of consumers;
  - Decoupling from EU as the acquis is progressing

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3. Cooperate on EU Strategy 1/2

- Offer possibilities for MS to use renewables in Ukraine to fulfill their commitments
  - No mechanisms in place - would require negotiations
- Offer MS to use carbon mitigation potential in Ukraine to fulfill their commitments
  - Even linking to the EU Emission Trading System could be made beneficial
- Offer MS to cooperate on security of supply infrastructure

- Cost: would require to implement the acquis –> significant political and monetary cost

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3. Cooperate on EU Strategy 2/2

Implementing the Acquis

- More strings to national energy policy
- Some of them „hard to swallow“
  - Environmental regulations are expensive
  - Market rules require reorganizing the industry and are typically met with resistance (e.g., unbundling, TPA)
- But, significant benefits
  - Commitment tool to attract investment
  - EU support for the transition

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4. Conclusions

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Conclusions 1/3

- EU energy strategy is as complex as EU policy making
- But, certain targets are quite clear
  - Decarbonisation
  - Market integration
  - Cooperation with suppliers
- Thus, certain consequences can be expected in the long-term (2050)
  - Decreasing gas and oil demand
  - Increasing electricity demand and prices
  - More need for capacity
  - Stronger market integration
- Danger of a gradual decoupling of UKR from EU acquis that continues to develop along its decarbonisation agenda

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Conclusions 2/3

- Price for “clean” energy will increase while selling "dirty” energy to the EU will become more difficult => selling cheap coal-generated power to the EU is no sustainable business model
- In the short-term (2020) electricity prices will increase and become more volatile in Ukraine’s Western neighbors => selling flexible products is becoming more profitable, while the “energy only” market will lose importance => deeper market integration required to be able to trade more complex products

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Conclusions 3/3

- Individual transit routes will lose importance => EU funds for modernisation can only be justified for clear value added (less emissions, increased security of supply)
- EU will play „stick and carrot“ on extending the acquis => there is a long-term possibility to participate in the EU support mechanisms for carbon reduction (ETS) and RES-E

- UKR has to decide how to go ahead in light of new EU energy strategy: Standing-by will lead to a gradual decoupling from the European energy market with long-term serious consequences

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Appendix

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The making of the Energy and Climate Change Package

- 9/2005 Heads of state summit calls for „Green Paper“
- 3/2006 Commission published „Green Paper“
- Council endorse „Green Paper“
- 12/2006 Parliament recommendations on targets (30/20/25)
- 1/2007 Commission presents “Energy and climate change package” 20-20-20
- 3/2007 Council approves objectives
- 1/2008 Commission presents the definitive package
- 3/2008 Council agrees on main principles
- 12/2008 Council and Parliament adopt the package

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1. Energy Efficiency

- Concrete actions will be proposed in the forthcoming Energy Efficiency Plan (Q1 2011); legislative proposals later in 2011
- Preliminary ideas presented in the Strategy:
  - Buildings and transport identified as sectors with biggest saving potential
  - Promotion of energy efficiency with public procurement
  - Energy efficiency standards for vehicles; ”second generation” labelling including comparisons; Ecodesign requirements for products; energy management schemes
  - Supply side: energy efficiency criteria to be included in authorization of generation capacities; promotion of cogeneration, district heating and cooling
  - Obligations to energy suppliers and retailers to introduce energy saving tools for customers (smart meters, white certificates etc)

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2. Integrated energy market

- Implementation of the 3rd energy package including the institutional framework (ACER, ENTSO-E); European market integration by 2015
- Ensuring necessary infrastructure investments (strategic priority projects, grid development); cost estimation €1000 billion up to 2020; Infrastructure package to be adopted on 17 November 2010
- Streamlining permit procedures and market rules for infrastructure developments (”European interest” projects)
- Innovative funding mechanisms for ”European interest” projects (additional resources under the next EU budget)
- Assessment of the effectiveness of the RES Directive in 2011

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3. Consumers' protection, safety and security

- More consumer-friendly energy policy through better information (switching the supplier, price comparison tools, best practices, improvements in retail market)
- Improvement of safety conditions of offshore oil and gas extraction
- Legal framework for nuclear safety and security, including nuclear waste
- European approach on nuclear liability regimes
- Redefinition of the basic safety standards for the protection of workers and the population (nuclear)
- Safety and security of new technologies (CO2 storage and transportation, hydrogen safety)

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4. Making a technological shift

- Implementing the Strategic technology Plan (SET Plan) without delay (European industrial initiatives on wind, solar, bioenergy, smart grids, nuclear fission, CCS) including large-scale demonstration programmes
- EU Financing through NER300 and Research Framework Programme
- Development of strategic energy research infrastructures in Europe
- Launch of large-scale European projects on smart grids, electricity storage, sustainable biofuels production and Smart Cities Innovation Partnership
- €1 billion initiative (FP7) for frontier research to deliver science necessary for low-carbon energy breakthroughs; energy research programme for energy materials; EU leadership in ITER

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5. External dimension of the EU energy market

- Integrating energy market and regulatory frameworks with neighbouring countries (Energy Community Treaty)
- Aligning existing international agreements (esp. gas) with the internal market rules, streghtening the cooperation between Member States; regualtory framework to develop strategic routes from new suppliers; freedom of transit and investment security
- Establishment of privileged partnerships with key partners
- Promoting the global role of the EU for a future of low-carbon energy
- Promoting legally binding nuclear-safety, security and non-proliferation standards worldwide

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