ECN

Energy research Centre of the Netherlands

The Ecofys IR: some preliminary remarks

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Contents

- **What should the Ecofys study deliver (ToR)**
- IR: approach and results so far
- Concluding remarks

Some key requirements (section 1.2)

- Explore impact EC env policies, esp. Barroso E+C package, on energy security in the EU and Europe
- Establish methodology ...policies that achieve both ES and CC mitigation objectives as efficient as possible
- Propose approach to quantify which env. measures are effective under shifting ..European/world energy situation
- Analyse ES issues in years 2020 and 2030

Key requirements: some comments

- Medium / long-term focus ➔ not only vulnerability impulses (events) matter but also evolving trends that deteriorate the impact of SoS vulnerability

- Theoretical framing would logically have to precede the assessment of environmental measures

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Theoretical framing

(1) Taxonomy root causes

(2) Causal mechanisms (5-staged cause-impact analysis)

(3) Review of indicators to cover each stage for selected SoS issues ➔ Outline of quantitative approach for selected SoS issues

(4) Case studies to test the quantitative approach

Ad 1 Determination of root causes

- Immediate listing of root causes
  - Extreme events; inadequate market structures; resource concentration
- Is it possible to immediately determine the root causes without a proper analysis of what "energy security" is? Thorough prior analysis required of energy **services** requirements in the country/region considered ➔ assessment of supply vulnerabilities
- Depending on the time horizon SoS is not merely jeopardised by "extreme events" but also by slowly enfolding vulnerability enhancing trends
- Depletion is one of the key vulnerability enhancing trends: relying on market forces to respond (p.8), given time-based rationality of key stakeholders and inertia because of long-lived capital goods is a very dangerous presumption indeed.
- We are witnessing what huge impact reliance on market forces in the financial sector because of seriously discounted externalities.
- Because of inertia SoS externalities the potential impact of reliance on market forces for addressing LT SoS might be even appreciably larger!

Ad 2 Causal mechanisms

- Stages approach is major improvement in theoretical frame compared to the Lefèvre (IEA 2007) report
- Role of demand side participation is acknowledged, yet cannot be properly analysed without analysis of energy **services**
- Acknowledgement of supply flexibility also important.
- Yet elaboration ad hoc. Needs to be elaborated per supply chain in a comprehensive way.
- Suggest to give brief label to each stage instead of “Stage I, etc.”

Ad 3 quantitative approach:principles 1

- Agree with choice for vulnerability-based indicators instead of outcome-based indicators
- Work on later tends to be full of biases by orthodox welfare-economics practitioners, suggesting that SoS externalities or minimal or non-existent.
- Do not agree with choice for only separate indicators to the SoS issues selected. This very much depends on purposes of the indicators.
- Only separate indicators + normalised spider diagrams will fall short of communicating the sense of urgency of looming catastrophic SoS problems that is very much warranted!

Ad 3 quantitative approach:principles 2

- Transparency does not necessarily exclude subjectivity
- Subjectivity is unavoidable for tools to derive normative policy prescriptions
- In fact many if not all of the proposed indicators in the IR contain subjective aggregation elements. Also the selection of SoS issues is quite biased with serious gaps.

Ad 3 Quantitative approach: issue selection (1)

Selected Stage 1 issues:

- The impact of extreme weather on peak energy demand
- LS accidents, strikes, terrorists activities decreasing physical supply for some period
- Investment shortfall (power sector)
- Load balancing failure in power networks
- Concentration international fossil fuel markets (supra-competitive prices, physical supply disruptions)

Ad 3 Quantitative approach: issue selection (2)

- Choice of themes is quite subjective: biased towards ST/MT with serious gaps. Poor coverage of the LT themes set out hereafter.

- Recent literature suggests that depletion/access to energy resources and ancillary limitations will not endorse the typical long-term TPES trends that providers of offical projections suggest

- Some analysts see these limitations binding in such a way that LT fossil fuel use in even the lowest ppm IPPC scenarios may turn out to be hardly be achievable.

Ad 3 Quantitative approach: issue selection (3)

- Leaving these limitations to be addressed by market mechanism is potential recipe for major MT/LT catastrophes.

- Warranted *fast*:
  - energy efficiency improvement
  - structural change toward low-energy energy services
  - energy conservation
  - fossil-fuel phase-out transition
  - accelerated transition towards sustainable world population levels.

- Looming steepening LT price trend for fossil fuels + power certainly part of the SoS equation, not only price volatility.

Ad 4 Approach applications – Case studies selection

Proposed selection

- Effects of FIT legislation Spain
- Impact LCP directive UK
- Effect of UK obligation certificates
- CHP policies in NL

Assessment

- Deficient selection of extremely small part of Baroso package
- Selection does not give any robust clue what the net effects of the Baroso package components are on SoS in the EU
- Study is not on selection of the best RES-E support mechanism
- CCS and EU ETS totally neglected

Ad 4 Approach applications - Linkages analysis EU CC policy (section 3)

- Results of this chapter are quite unsatisfactory if not further elaborated quantitatively in the FR based on the quantitative approach to be proposed

- The study claims to aim for objective results but especially in the long table 3-11 provides a number of highly subjective impact qualifications that seriously lack quantitative underpinning

- CCS is a measure meriting key attention and plausible quantitative elaboration on its SoS effect for the EU/world:
  - Fast increasing import dependency of coal for EU
  - Recent reports including the EU's in-house research institute JRC indicate that availability of coal resources tend to be grossly over-estimated by policymakers and many analysts
  - Large expansion of "capture-ready" coal-based power capacity in EU looms. CCS used as key lobby argument
  - Requirements for coal on a life cycle analysis basis increase typically at least by some 25% when applying CCS.

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Conclusing remarks 1

- **Proposed methodology encompasses notable improvements over the 2007 IEA study and sets out to include demand-side aspects**
- **However the vulnerability issues selection is quite biased toward some ST/MT issues and overlooks i.a. many demand-side aspects and quite serious LT issues**
- **As for SoS the stakes are on reducing vulnerabilities to energy services security; energy as such is broadly not in short supply**
- **No silver bullet indicator** to encompass all security of supply complexities and policy needs
- Yet both an issue-specific **and – notably for communication purposes – a comprehensive approach** warranted to address key issues

Conclusing remarks 2

- **The approach applications should give a more representative reflection of the Baroso package and not neglect key components such as CCS and EU ETS. Given the effort this may take, it could be considered to skip the proposed case studies on NL CHP policy and UK LCP directive UK**

- The 20% renewables directive should be considered as such assuming that it will be achieved at MS level and then make a quantitative assessment of its impacts. **It should not assess the merits of a particular RES support mechanism such as the UK RO or the Spanish FIT.**

- The report is written in clear language. For the SoS issues identified laudable attempts have been made to give a systematic elaboration. The consequence is though a thick report that is not easily assessable for third persons not very familiar with the details, whilst also making it susceptible to pre-empt “seeing the forest (the projected general SoS situation of a country/region, including key LT aspects) through the trees”.

- It is proposed to submit **a concise, well readable FR** with separate accompanying annexes for detailed elaborations for specialists.

Thank you

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