

Forum on the Climate-Energy Security Nexus: Implications for Business

(Exploring the impact on business of changes in energy from a changing climate)

SUMMARY REPORT

On 8 November 2012, the IEA convened a group of companies from the energy, manufacturing and financial sectors, along with government representatives for an exploratory discussion on the impacts of a changing climate and how energy-related sectors could enhance their resilience to these impacts.

Much has been said about the ways in which our energy system is affecting the climate, yet very little has been said about the opposite: the effects of a changing climate on our energy system. This issue is becoming pressing as we are headed towards at least 2 degrees of warming and the impacts of climate change may already be beginning to show in changes in precipitation and an increase in the severity of extreme weather events such as hurricanes and heat waves. The threat that climate change poses to energy systems is a new area of interest for the IEA – one that goes to the IEA’s core mission of enhancing energy security.

This first meeting provided an opportunity to assess the extent to which major businesses are considering these issues and to hear their views on the scope for, and limits of, adaptability in existing energy systems and processes. Participants brainstormed together about how to support an energy sector effort to be more resilient, helping the IEA canvas the variety of issues at stake for the range of stakeholders in this discussion. This document provides a summary of those issues, which must be addressed as part of the work of improving the resilience of energy systems to climate change.

OVERARCHING ISSUES:

- A stronger narrative is needed to rationalise action on resilience in the short term
 - Clearly document current climate impacts and resiliency solution options
 - Definition of climate change resilience vis-à-vis adaptability are needed
 - Explain the trade-off between short-term spend and long-term risk hedging/ cost-effectiveness
 - Must make the economic argument for resilience
 - Emphasise the co-benefits of adaptation measures (opportunities to make quality improvements at the same time)
 - “Thought Leadership” needed to develop new resiliency paradigm for stakeholders
 - Provide time horizons for each resilience issue
- Data is urgently needed
 - Is all the necessary information being gathered currently by research centres?
 - Meteorological projection data needs to be better circulated to interested parties: connect research centres & weather centres to governments & industry
 - Costs of inaction to the sector need to be better characterised and modelled
 - Companies may be reluctant to share data on possible costs of inaction for fear of compromising competitiveness – this concern needs to be addressed
- Emissions are global but impacts are regionally diverse – must be addressed regionally/locally
 - Resilience aims at protecting specific interests from localised impacts - agency
 - Mitigation modelling is global, but adaptation modelling needs to be regional/local
 - Solutions should be based in local action – bottom-up approach
 - Agreements and/or regulations should be regional, based on regional projections
 - Local government and their coalitions could be an avenue for this discussion
- Flexibility and responsiveness needs to be built in to respond to sudden climatic changes
 - Into regulations
 - Into technologies
 - Build in “improvement cycles” which ensure revisiting of presumptions

<ul style="list-style-type: none"> • Allocation of risk and responsibility between government and private actors must be canvassed early to allow constructive steps to be taken on both sides <ul style="list-style-type: none"> ▪ Between suppliers, users, governments and private citizens ▪ Should high risk-industries take on more than low-risk industries? ▪ Consider risk-interconnectivity ▪ Within governments and within companies ▪ A segmented approach may be most effective ▪ How to retain flexibility for trial & error and adjustment in this regard?
<ul style="list-style-type: none"> • Decision-making systems for resilience need to be investigated <ul style="list-style-type: none"> ▪ Are current systems cost-effective? ▪ Would sectoral systems be most useful? ▪ Risk assessment should consider economic, ecological, social and reputational risks ▪ Some stakeholders have begun to develop vocabulary for discussion in this area
<ul style="list-style-type: none"> • Future discussions should: <ul style="list-style-type: none"> ▪ Address both short-term actions as well as long-term structural changes ▪ Follow a collaborative process – foster a shared sense of responsibility ▪ Take the form of a pre-investment investigation – no obligation thought leadership ▪ Use realism and pragmatism – not a purist approach ▪ Attempt prioritisation – this takes courage ▪ Use a systematic approach – suited to the process-based nature of these industries ▪ Consider the limits of the adaptive potential of existing systems and technologies – brand new ones may need to be developed

ENERGY SUPPLY SECTOR ISSUES:
<ul style="list-style-type: none"> • Consider changing the role of a sector which has historically been economically robust. Solutions should take account of this context <ul style="list-style-type: none"> ▪ Energy sector has traditionally been treated as a strong driver in the economy and tax source. ▪ It has been viewed as a key sector for mitigation action ▪ Increasing vulnerability of the sector must be reconciled ▪ Limited ability to pass on price increases to customers
<ul style="list-style-type: none"> • Extending planning timelines: from immediate/short-term to long-term thinking 10-20 yrs out <ul style="list-style-type: none"> ▪ 100-year-wave approach is standard, anything more is rare ▪ Primarily interested in growth projects or protecting core business
<ul style="list-style-type: none"> • New adaptation obligations must be balanced with mitigation obligations <ul style="list-style-type: none"> ▪ Not necessarily complimentary ▪ Attention to one may reduce attention/spending on the other
<ul style="list-style-type: none"> • Internal decision-making must develop to incorporate resilience questions into: <ul style="list-style-type: none"> ▪ Assessing design standards, operating conditions, tolerance levels ▪ Assessing the full lifecycle of energy assets in light of future impacts and risks ▪ Future looking activities as well as opportunity for retroactive actions
<ul style="list-style-type: none"> • Who will bear the cost of resilience measures? <ul style="list-style-type: none"> ▪ The business absorbs as a risk-hedging measure? Nb. role of energy efficiency ▪ The consumer? ▪ The government/tax payer?
<ul style="list-style-type: none"> • Special issues for renewable generation - directly reliant on weather patterns

ENERGY-USING SECTOR ISSUES:
<ul style="list-style-type: none"> • Market reforms may be needed that will encourage greater, faster technology innovation
<ul style="list-style-type: none"> • Demand side management is key to increasing resilience <ul style="list-style-type: none"> ▪ Manage demand to fit supply
<ul style="list-style-type: none"> • Use of price signals to manage demand may assist <ul style="list-style-type: none"> ▪ Pricing areas; pay-rates and tariffs

<ul style="list-style-type: none"> • How can regional resilience costs be reconciled with/reflected in a global market? <ul style="list-style-type: none"> ▪ e.g. how does the global price for copper account for local costs?
<ul style="list-style-type: none"> • Some users more vulnerable than others <ul style="list-style-type: none"> ▪ Should burden of risk be allocated on this basis?

FINANCIAL SECTOR ISSUES:
<ul style="list-style-type: none"> • Fund managers should take a leading role in encouraging investment by highlighting the economic logic of resilience
<ul style="list-style-type: none"> • Energy sector is no longer a secure investment sector – uncertainties related to climate change have resulted in a loss of public trust and viability <ul style="list-style-type: none"> ▪ Policy uncertainty ▪ Weather and climate impact uncertainty ▪ Resilience investments need to be characterised as low-risk
<ul style="list-style-type: none"> • Insurers have key role to play in encouraging suppliers to take resilience measures <ul style="list-style-type: none"> ▪ Introduction of new resilience requirements could support lending on high climate-risk investments
<ul style="list-style-type: none"> • Legal risk and responsibility concepts need clarification in light of new climate scenarios <ul style="list-style-type: none"> ▪ Damage allocation concepts ▪ Definitions of “Force Majeure” and “Act of God”

GOVERNMENT ISSUES:
<ul style="list-style-type: none"> • Role of government regarding climate change impacts is still unclear <ul style="list-style-type: none"> ▪ Traditionally, governments do core prevention and companies do risk-hedging – dialogue could be started to explore this division ▪ Should government take responsibility for impacts of climate change? (Currently climate impacts generally viewed as “Act of God” = no liability) ▪ What would be the implication of government setting requirements for resilience actions – does this equate to acceptance of responsibility for impacts – if impacts are greater than expected?
<ul style="list-style-type: none"> • Governments have largely seen their role in raising awareness among individuals and companies <ul style="list-style-type: none"> ▪ Information dissemination ▪ Encouraging or requiring resilience actions in private sector ▪ Requiring private sector to prepare business continuity plans
<ul style="list-style-type: none"> • Government has a key role in providing projections and disseminating data on potential climate change impacts
<ul style="list-style-type: none"> • Responsibility for resilience needs to be allocated within governments <ul style="list-style-type: none"> ▪ Issue must be extended beyond environment ministries, to energy ministries – in support of a stronger narrative on resilience requirements ▪ Responsible officers and coordinators should be nominated ▪ Independent economic regulators may also have a role to play
<ul style="list-style-type: none"> • The energy sector will always be guided by public policy in climate adaptation field <ul style="list-style-type: none"> ▪ Policy and regulation must be clear and certain ▪ Carrots vs. sticks – while carrots are generally favourable to the private sector, sticks may provide more certainty for investment without harming competitiveness ▪ How should resilience policy be designed to encourage technology innovation? ▪ Should steps be taken to reform the energy market? ▪ Government’s task may be more complex in a more liberalised energy market

SPHERES OF ACTION FOR ENHANCING RESILIENCE:



IEA CONTRIBUTION TO ENHANCING RESILIENCE:

The IEA proposes 4 tracks of possible follow-up work to the Nexus Forum:

1	CONTINUING DIALOGUE
	<ul style="list-style-type: none"> • Generate inventory of recent forums and groups on energy system resiliency or similar issues • Convene ad hoc working group (“coalition”) of interested parties from business (energy suppliers and users) and government, possibly think tanks and NGOs: <ul style="list-style-type: none"> ◦ To identify ways Governments and businesses can work together to enhance resilience, including possible policy interventions; discuss latest developments (commercial, technical, political and scientific) and share experiences and methodologies
2	POLICY DEVELOPMENT
	<ul style="list-style-type: none"> • Generate inventory of existing/planned governmental policies and plans addressing resilience issues • Include energy system resilience discussion into IEA <i>In Depth Review</i> process Publish policy action inventory material on the IEA’s <i>Policies and Measures Database</i> • Generate inventory of existing/planned commercial plans
3	DATA GATHERING & ANALYSIS TOOLS
	<ul style="list-style-type: none"> • Carry out desk-top study to identify existing studies and results in resilience • Generate a tool-kit, with evaluation, of existing methodologies for assessing resilience and identifying vulnerabilities • Prepare case studies on particular economic areas where impacts have already been felt
4	MODELLING
	<ul style="list-style-type: none"> • Identify various models looking at climate change impacts • Investigate how existing models might be adapted to project impacts on resilience • Consider what new modelling is needed (e.g., feedback loop of climate on demand, etc.)

