



**WORLD ENERGY COUNCIL**  
CONSEIL MONDIAL DE L'ÉNERGIE  
*For sustainable energy.*

# WEC Scenarios: Update

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Promoting sustainable energy for the greatest benefit of all



# Agenda

- 1. Update – Scenarios  
latest modelling run**
- 2. Discussion  
Scenario stories and assumptions**
- 3. Linking WEC flagship publications:  
Trilemma indicators as input to the scenario model**
- 4. Outlook: Next steps**

**Desired outcome of this workshop:  
Finalisation of scenario stories and sign of by MCs**



## Update: WEC Scenarios

- Two Scenarios stories are being developed, exploratory not normative, equally probable but differentiated, rather than good and bad,
  - Jazz:  
Markets facilitate, consumer driven, focus on achieving growth through low cost energy
  - Symphony:  
Governments lead, voter driven, focus on energy security, national and regional measures to increase share of renewables in energy mix (RES-E)
- Modelling input is being refined to provide quantification for the scenario storylines – currently conducting sensitivity analyses based on a third iteration of the model
- Regional input is being sought at Paris, Cancun, Indaba, Delhi, Washington. Can be aggregated to the 8 WEC regions. 15 country groups for next stage.
- Integration of WEC flagship publications: WEC Trilemma metric / key indicators being used to incorporate all three dimensions of the energy trilemma
- Current modelling results (third run, 26 October 2012) reflect refining of scenarios carried out at London workshop in September 2012

# WEC regions/ regional breakdown

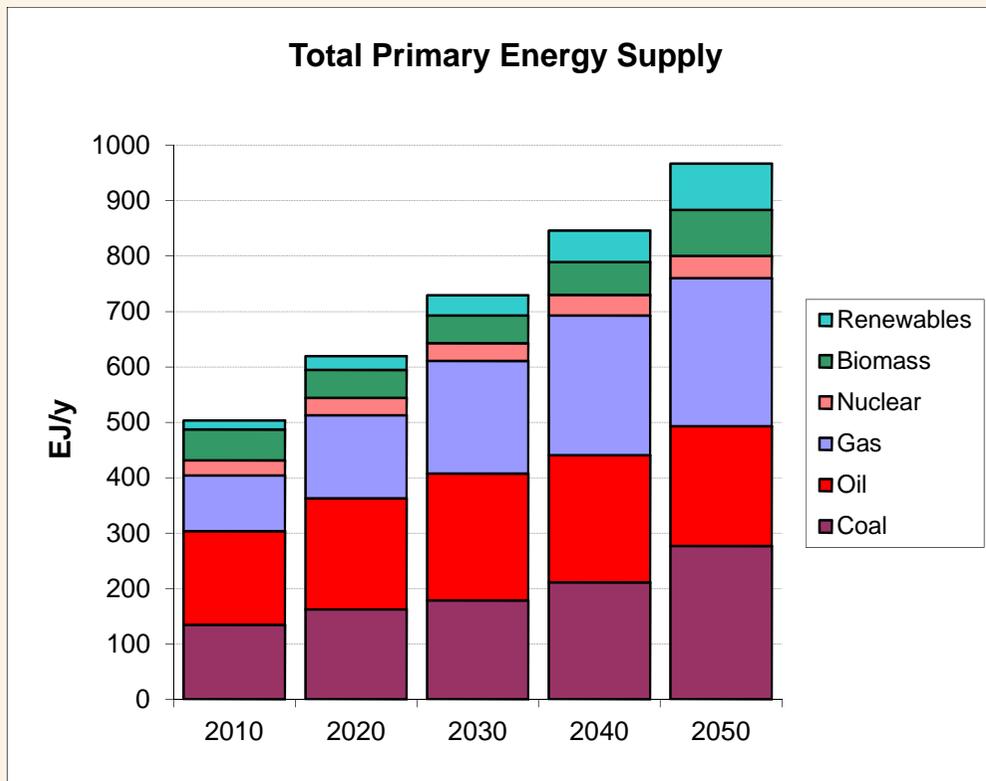
- Africa
- Middle East & North Africa
- Latin America & The Caribbean
- North America
- Europe
- South & Central Asia
- East Asia
- Southeast Asia & Pacific

## Brief outline of scenario stories

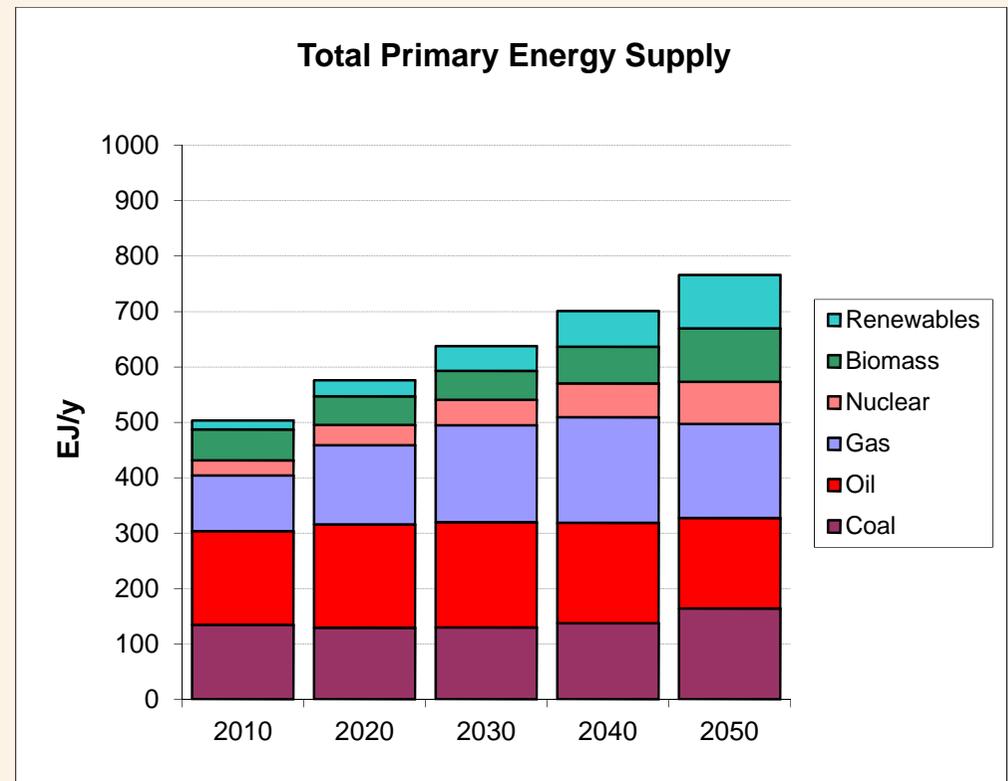
<b>Markets Lead, States Facilitate JAZZ (consumer)</b>	<b>States Mandate, Markets Follow Symphony (voter)</b>
World with solutions where market forces prevail and governments facilitate these forces	World where policy makers implement national and regional climate change measures
Main players are global companies, banks, venture capitalists, consumers	Main players are public-sector companies, local governments, NGOs, voters
Market decides technology winners	Governments pick technology winners
Elimination of subsidies & tax reductions, including for fossil fuels, higher GDP growth	Taxes, Feed in Tariffs & Renewable subsidies used to promote renewable energy, lower GDP
Free-trade strategies - increased exports	Nationalistic strategies - reduced exports/imports
Renewable energy grows in line with market selection	Certain types of renewable energy actively promoted by governments

# Model results

## Jazz



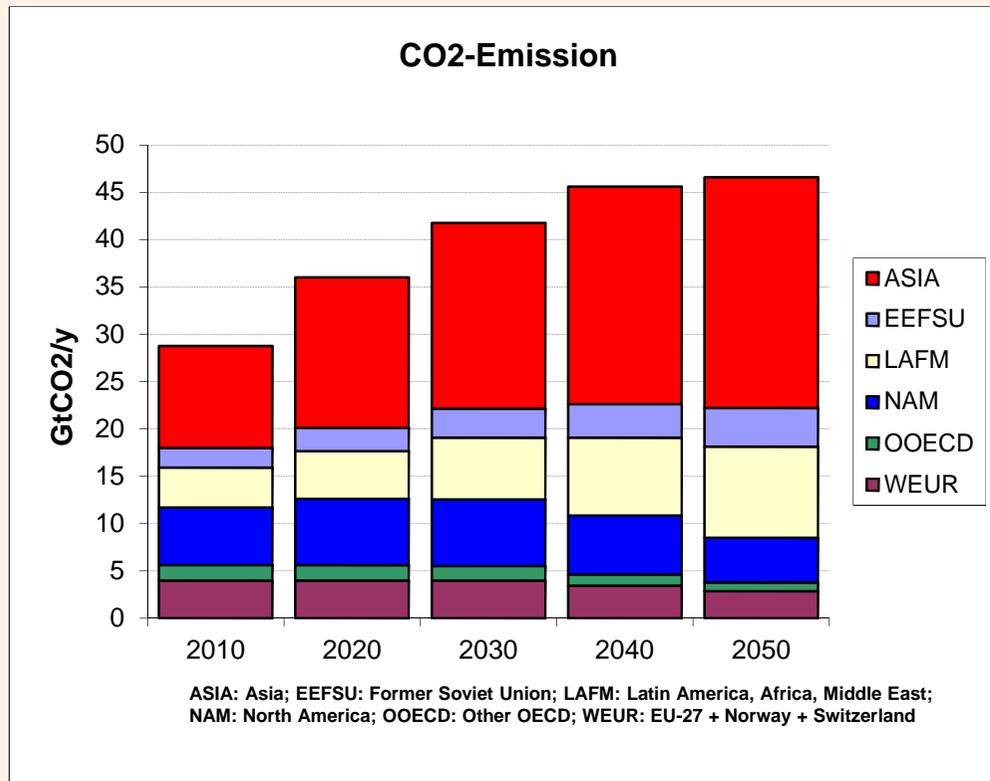
## Symphony



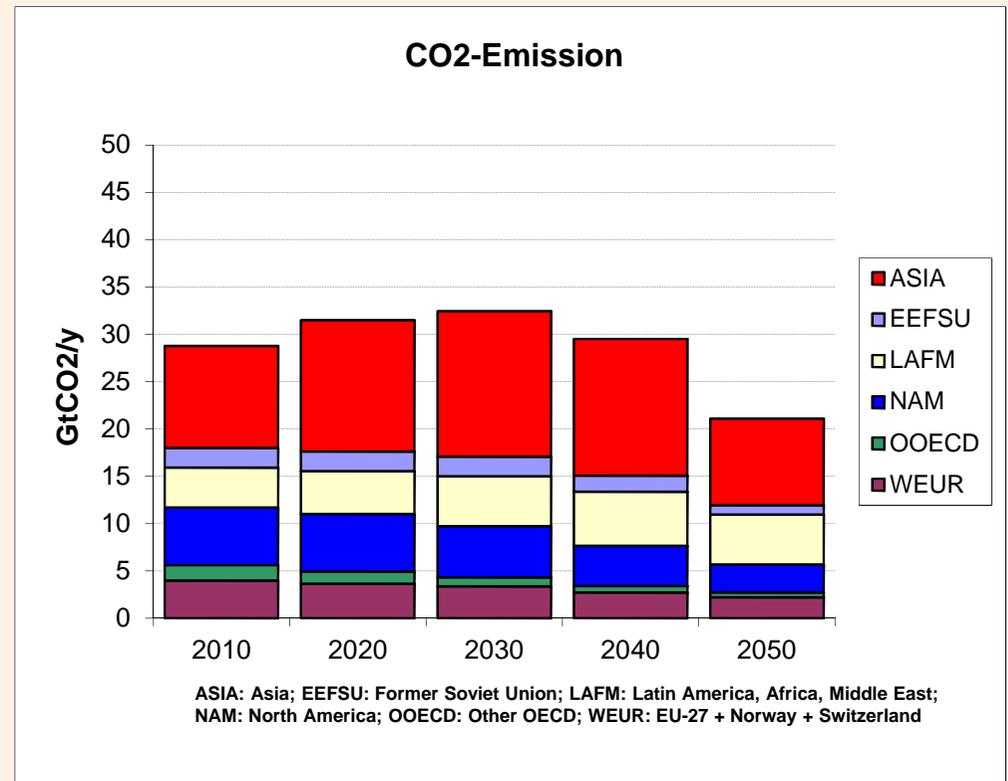
Source: PSI (2012)-Third modelling run (26 October 2012)

# Model results

## Jazz



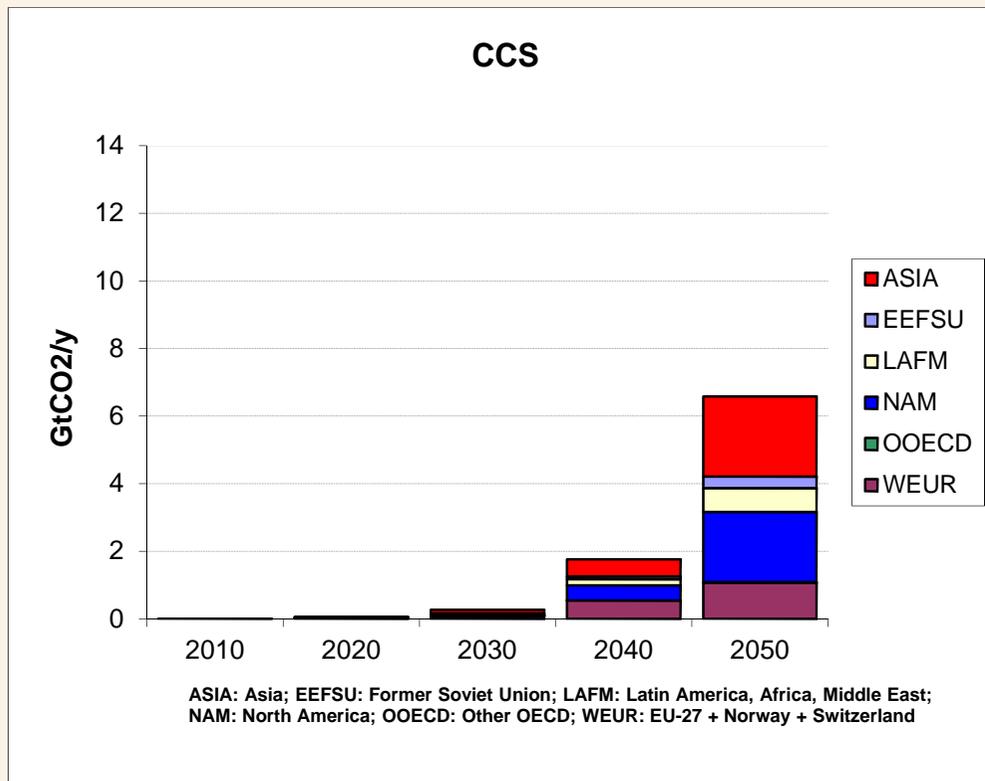
## Symphony



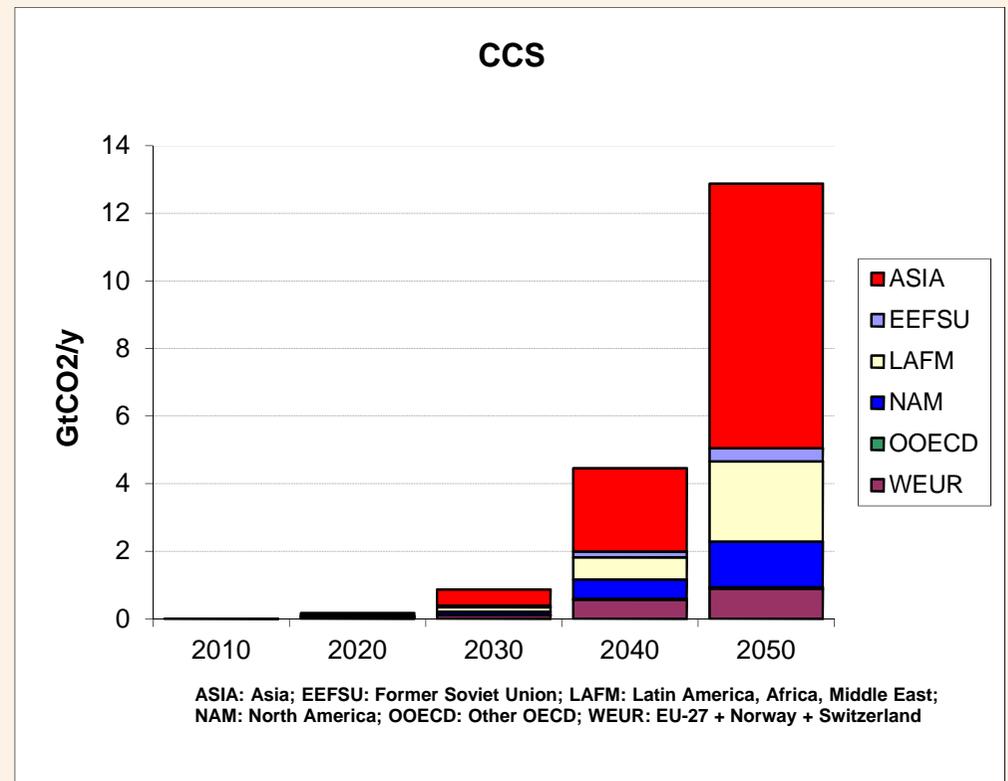
Source: PSI (2012)-Third modelling run (26 October 2012)

# Model results

## Jazz



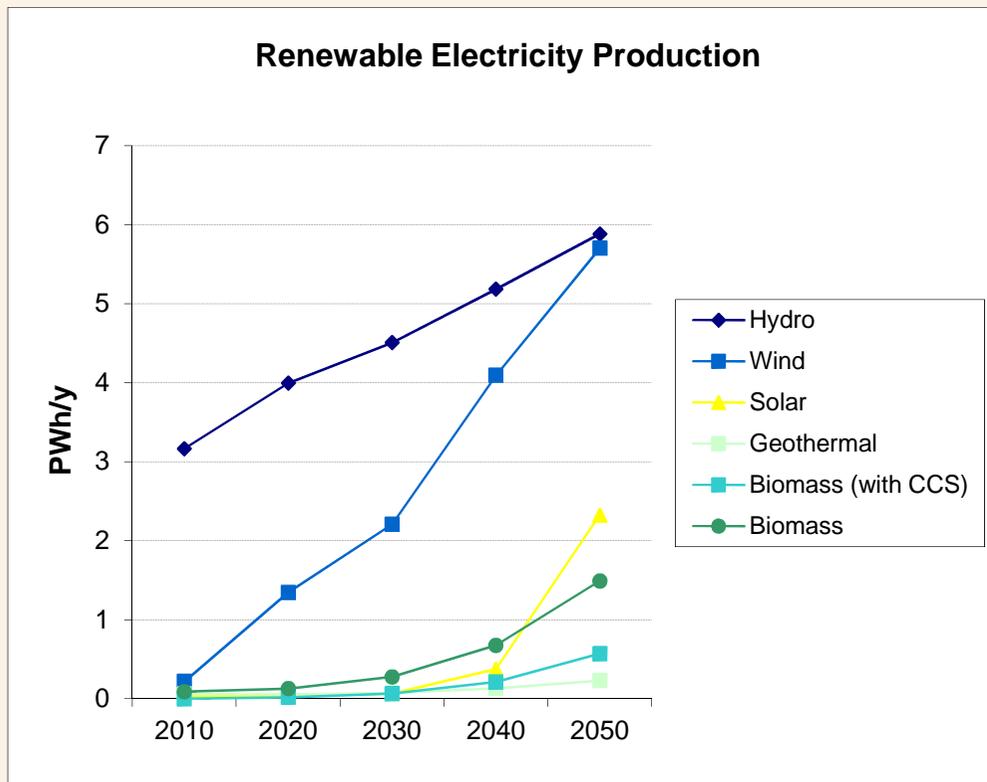
## Symphony



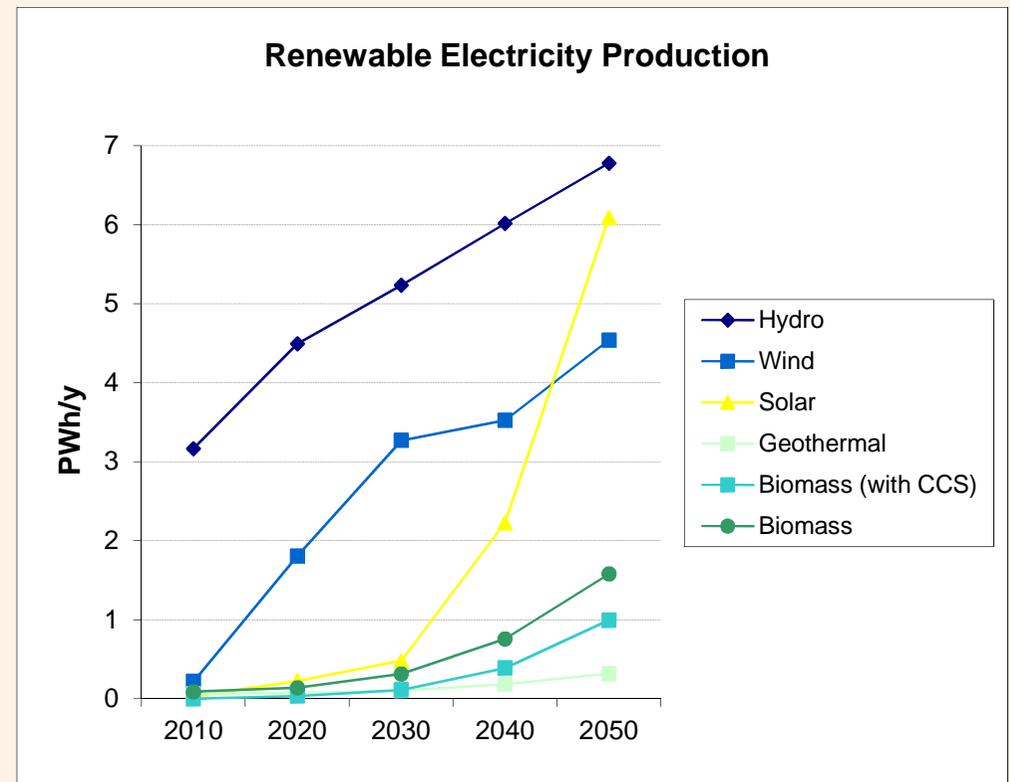
Source: PSI (2012)-Third modelling run (26 October 2012)

# Model results

## Jazz



## Symphony



Source: PSI (2012)-Third modelling run (26 October 2012)

# Widening the scenarios envelope: Finalisation of scenario stories (I)

## Jazz-scenario

- No emergence of a global carbon price
- Carbon pricing emerges only in the EU, with an EU-wide carbon market by 2020
- International carbon trade does not emerge by the end of the scenario period.
- Rather, EU has the most developed carbon market, with carbon markets slowly emerging in other regions.
- 2<sup>nd</sup> generation biofuels: No early gains in the Jazz scenario, maybe in the symphony scenario?

# Widening the scenarios envelope: Finalisation of scenario stories (II)

## Symphony-scenario

- **Efficiency and green standards and product branding: Impact on consumer choice**
- **Demand side management, embedded generation, and smart grids stronger in the symphony scenario**
- **Clean Development Mechanisms in the US by 2020**
- **Governments: Common commitment to reducing carbon emissions: Emergence of a global carbon price in the latter half of the scenario period**
- **Existing CDMs will succeed in EU and US**
- **Regional carbon markets emerge by 2020**
- **Efficiency brands become important in consumer minds**
- **Growth in 2nd generation biofuels sector expected**

# Trilemma indicators: Input to the scenario model

## **Social Equity (access and affordability)**

- Marginal Generation cost
- Marginal cost of petrol/diesel
- Costs vs GD
- Investment required
- Access (customer numbers connected to the grid)

## **Energy Security**

- Share of inputs
- Diversity of supply
- Diversity of demand (markets for export and range for home market)
- Reserve capacity (electricity)
- R/P ratios

## **Environmental Sustainability**

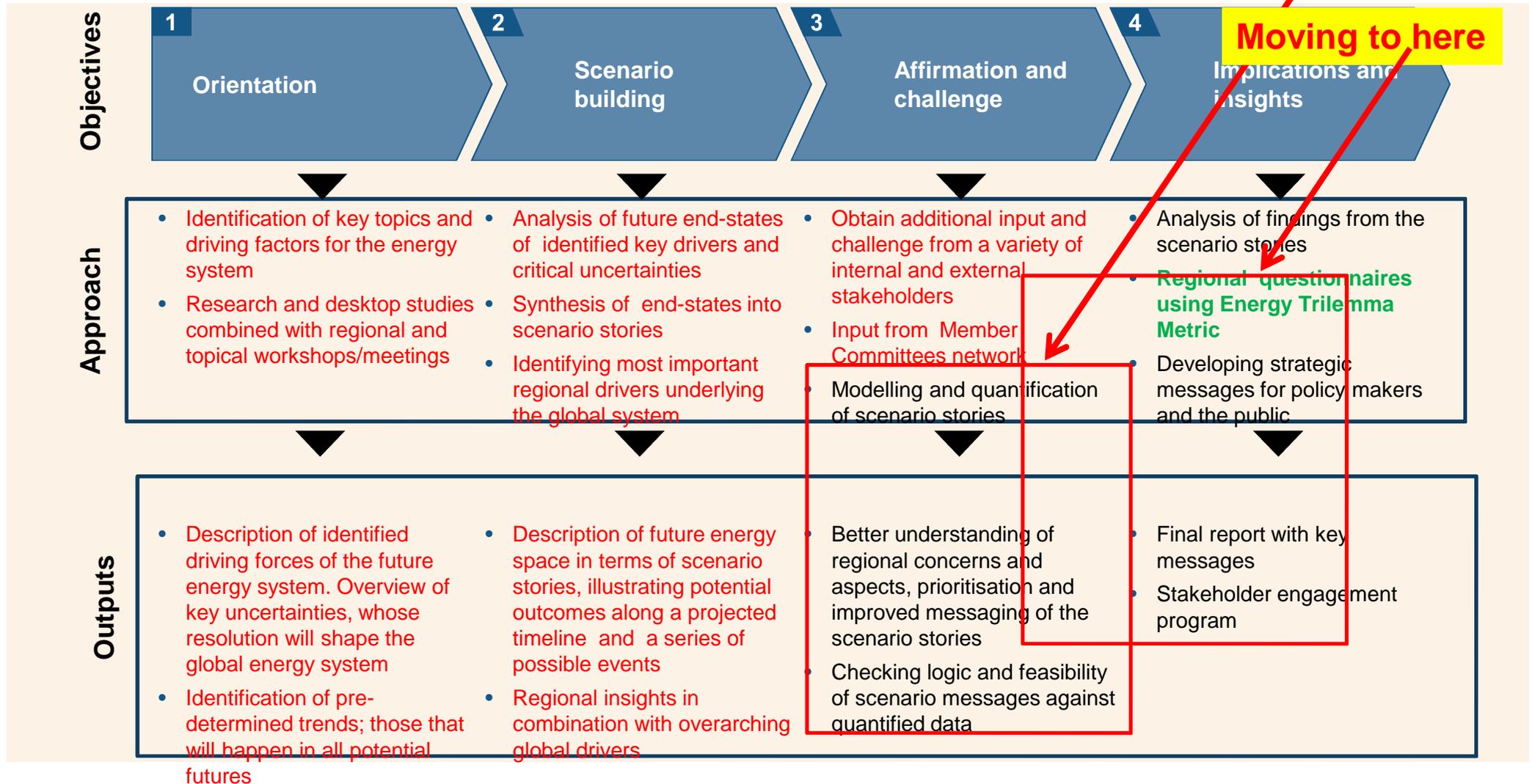
- CO<sub>2</sub> Emissions
- Competition for land (biofuels)
- Water use (unconventional oil and gas, large hydro)



# Outlook: Next steps

Now we are here

Moving to here



## Outlook: Timetable

- End of November 2012:  
Results of sensitivity analyses to be obtained from PSI
  - 5-8 December 2012: Cancun meeting
  - Mid December 2012:  
Indicative results to be obtained from PSI  
regional breakdown: 8 WEC regions
  - February 2013  
Scenario workshop/India WELS meeting
  - February 2013  
Scenario workshop/ Johannesburg, Indaba meeting
  - April 2013  
Finalisation of scenario stories and modelling work for 15 WEC regions
  - October 2013:  
launch of the scenarios report at the World Energy Congress in Daegu
- Tentative meetings:**  
**April 2012-Washington (tbc)**  
**April 2012-Asia (tbc)**