How to read the issues monitor – categories and axes

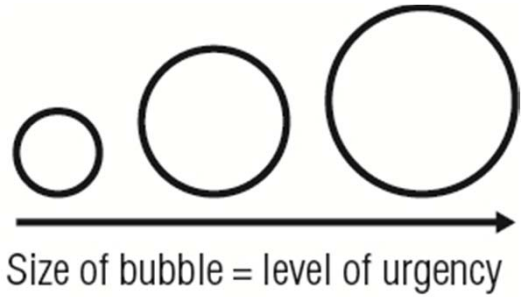
Categories and individual issues:

The World Energy Issues Monitor assesses 37 issues in a high-level overview, covering four categories, each of which is represented by a different colour:

- Macroeconomic
- Geopolitics & regional
- Business environment
- Vision & technology

Dimensions/Axes:

- Impact of an issue on the energy sector – x axis
- Uncertainty related to its impact – y axis
- Urgency with which we need to address the specific issue – size of bubble



Macroeconomic risks and vulnerabilities	
Global climate framework uncertainty	*Uncertainty* on outcome and time-horizon of global climate negotiations, i.e. the question of whether there will be a global / regional price on CO_2 and if so, at what level that price would be.
Large-scale accidents	Post-Fukushima nuclear disaster and Macondo oil spill: possibility of potential further energy-related large-scale accidents and implications of changes in governance and safety standards to avoid these.
Global recession	Implication of recession, including e.g. relative decoupling of global economy, impact on subsidies for and trade of green goods.
Capital market constraints	Difficult matching of capital to deliver energy infrastructure.
Commodity prices and volatility	High prices, volatility and inflationary risk.
Energy prices and volatility	High volatility and investment uncertainty ('security of demand' concern).
Currency uncertainty	Exchange rate, insolvency and currency devaluation risks negatively impacting on energy infrastructure investments.
Energy-water-food nexus	Energy-water-food nexus exposing energy supply chain to risks regarding changing water availability and policies to combat hunger.
Talent scarcity	Shortage of future engineering or other energy-relevant skills negatively affecting energy infrastructure development and expansion.
Energy poverty	1.3 billion people are still without access to electricity, 87% in rural areas; new entrepreneurial models, creation of financing mechanisms, focused government policies to deliver solutions.
Energy affordability	Also referred to 'fuel poverty', high or increasing energy prices weighing on household budgets.
Corruption	Slowing down development and development of effective policies.
Energy geopolitics and regional issues	
China/India growth	Shifting demand to East, competition for scarce resources, market uncertainties and sustainability of continued growth rates.
Brazil realising its potential as role model for Latin America	Realising its potential, influence on regional policy, growth and development within the region.
Russia energy diplomacy	Ability to adapt to shale gas context and maintain its importance in the natural gas sector; implications for regional / global gas markets.
EU cohesion	Absence of common energy policy with negative effects on common energy market and regional interconnection.
Middle East/North Africa fragility	Political fragility and potential conflict (e.g. around Suez Canal) affecting global security of supply.
US trade and policy influencing global energy markets	US-driven innovation and policy influencing global energy trade; and affecting priorities in bilateral relations and international security policies.
Terrorism	Physical risks and cyber threats affecting energy markets.

Energy policies and business environment	
Trade barriers	Constraining or enabling green growth (e.g. through technology transfer or lack of).
Regional interconnection	Underdevelopment of regional infrastructure, potentially high cost implications of unequal distribution of resources.
Business cycle	Overcapacity and underinvestment in energy infrastructure as a growth constraint.
Innovative market design and policies	New market designs and policies securing back-up and storage capacity in electricity markets with increasing intermittent renewable energy shares; fragmented regulation leading to ineffective solutions.
Energy subsidies	Uncertainty over subsidy sustainability.
New market players	Diminished resources base of international oil companies; old utilities not fit for decentralised technologies.
Energy vision and technology	
Sustainable cities	Realising resource efficient urbanisation at scale.
Energy efficiency	Overcoming barriers to implementation and achieving its potential
Carbon capture, utilisation and storage (CCUS)	Overcoming barriers to achieving scale, innovative solutions to make projects viable (enhanced oil recovery, CO_2-to-plastic, CO_2-to-algae/biofuels).
Renewable energy	Maintaining traction to achieving scale.
Biofuels	Overcoming barriers to realising potential.
Smart grid	Decentralised solutions and business models taken to scale.
Future mobility/ electric vehicles	Innovative mobility concepts, new transportation modes and fuel sources, including electric vehicles, natural gas vehicles realising potential.
Electricity storage	Cheaper batteries, 'power to gas' storage (of excess generation from renewables) and scalability.
Nuclear	Future of nuclear post-Fukushima.
Hydropower	Overcoming barriers to realising potential.
Unconventional fossil fuels	Shale gas, oil shale, potentially other unconventionals realising potential, altering global oil and gas market dynamics.
Hydrogen economy	Advancing to an achievable incremental vision.

How to read the issues monitor – zones

- **Critical uncertainties**: Issues with high uncertainty and high impact (in the top-right quadrant) are the 'critical uncertainties' with no clear path of action which keep energy leaders most awake at night.

- **Action priorities**: The issues in the high-impact and low-uncertainty space are those which keep energy leaders most busy (bottom-right, 'action issues').

- **Weak signals**: The low-impact and low-uncertainty issues (bottom-left quadrant) include those of perceived lesser importance or those that are still not fully understood and need further investigation.