

# Our place within the World Energy Council

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**Our energy sector is entering an exciting phase. Global uncertainties and unique domestic circumstances combine to provide New Zealand with energy choices and challenges.**

ENERGY WILL PLAY a significant role in lifting living standards and delivering improved outcomes for energy consumers.

The challenge is how to position businesses to take advantage of our abundant natural resource capacity and its conversion into high value, high demand goods and services in a way that balances commercial and environmental interests and grows overall economic activity.

The World Energy Council (WEC) and the BusinessNZ Energy Council (BEC) have an important role to play in helping us work through the challenges and seize the opportunities. Our programmes are designed to address the energy “trilemma” of providing secure, affordable and sustainable energy here and around the world. This country is ranked 10th by WEC against 129 other countries, for managing the energy trilemma. BEC’s current work includes the BEC2050 New Zealand energy scenarios.

The WEC is the principal international network of leaders and practitioners, promoting an affordable, stable and environmentally sustainable energy system for the greatest benefit of all. Formed in 1923, the WEC is the United Nations accredited global energy body, representing the entire energy spectrum. It has more than 3000 member organisations in over 90 countries, drawn from governments, private and state corporations, academia, nongovernment organisations and energy-related stakeholders. The WEC informs global, regional and national energy strategies by hosting high-level events, publishing authoritative studies and using its extensive member network to facilitate the world’s energy policy dialogue.

## Three core dimensions

The WEC’s definition of energy sustainability is based on three core dimensions – energy security, energy equity, and environmental sustainability. These three goals constitute a ‘trilemma’, entailing complex interwoven links

between public and private actors, governments and regulators, economic and social factors, national resources, environmental concerns, and individual behaviours.

The inherent strength in the WEC’s work programme is its ability to call upon expert knowledge from across the world and at all levels.

The World Energy Council’s main work programme includes the following flagship studies:

- **World Energy Resources:** A three yearly review on a country by country basis of global resources, reserves and production in the case of traditional fuels and installed capacity and electricity generation for the new and renewable resource.
- **World Energy Trilemma:** A study of how efficiently member countries’ policies are managing the energy trilemma: how to deliver energy securely, to mitigate the environmental impact of energy production and use, and to ensure energy is available to all and at an affordable price. New Zealand’s Energy Trilemma rating is discussed below.
- **World Energy Issues Monitor:** A worldwide survey of energy leaders which enables us to understand which issues are on the top of their agenda and to identify the stress points affecting the global energy transformation. New Zealand is an active participant in this survey, with 100 energy executives responding this year to help in the development of a New Zealand energy issues map which will be released January 2015.
- **World Energy Scenarios:** Two realistic scenario stories to 2050 using an explorative approach rather than the more commonly used normative methodology and modelled by WEC’s project partner, the Paul Scherrer Institute. WEC’s scenarios are ‘Jazz’ and ‘Symphony’, with Jazz being a trade or consumer-led scenario, and Symphony a state or voter-led scenario. New Zealand is utilising this WEC framework to

help it develop two uniquely New Zealand scenarios.

The BEC ([www.bec.org.nz](http://www.bec.org.nz)) was established in January 2013 as part of the BusinessNZ family. Consistent with the WEC approach, BEC members comprise a wide cross-section of leading energy related organisations whose shared goal is to support our economic well-being through promoting sustainable development and use of energy, both domestically and globally. BEC brings together the memberships of the BusinessNZ Major Companies Group and the former Energy Federation of New Zealand. Our broad network and membership encompasses the entire energy value chain from upstream explorers to downstream users, government and research entities.

It’s the BEC’s goal to contribute to and leverage the WEC studies to pursue energy sustainability in a way that achieves the country’s goals of giving consumers access to reliable least cost energy in an environmentally responsible way and helping businesses to grow and thrive, and competing vigorously on the global stage in which we are playing our part as a global citizen.

## Energy ‘Trilemma’ performance

We rank well in the WEC’s 2014 Energy Sustainability Index. The index provides a tool to assess the overall sustainability of a country’s energy system and how well it manages trade-offs between three competing dimensions (energy security, energy equity and environmental sustainability). When ranked against 129 other countries for managing the energy trilemma, New Zealand came 10th with a ‘balance score’ of AAB (AAA being the highest and DDD the lowest). The WEC considers New Zealand to be one of its ‘pack leaders’.

## BEC2050 Energy Scenarios

BEC2050 Energy Scenarios Project is helping

New Zealand plan for our energy future.

Rather than telling policymakers and senior energy leaders what to do, in order to achieve a specific policy goal, the WEC's World Energy Scenarios allow them to test the key assumptions that they decide to make to shape the energy of tomorrow. Policymakers and investors can use this tool to assess which are likely to be the most dynamic areas and real game-changers of tomorrow.

The three-year study 'World Energy Scenarios: Composing Energy Futures to 2050' was released in October 2013. Conducted by over 60 experts from nearly 30 countries, with modelling provided by WEC's project partner, the Paul Scherrer Institute, it revealed a number of insights about the choices the global energy sector will face in the future. The study developed two realistic scenario stories: the trade and consumer-driven Jazz scenario and the government and voter-driven Symphony scenario.

Scenarios allow energy decision makers to assess what is actually happening in the world now and gauge what will happen in the future including the real impact of today's choices on tomorrow's energy landscape.

New Zealand's energy systems and needs are changing, and the pace of change is increasing as

consumers and businesses quickly adapt to new technologies. The BEC is working alongside government, businesses, academics and NGOs to develop two scenarios – building a picture of what might influence our future energy mix by 2050.

The BEC2050 Energy Scenarios are being based on an internationally recognised

framework that has already been successfully used by the World Energy Council. The New Zealand modelling is also being carried out by the Paul Scherrer Institute.

What we're aiming to do is help decision makers to make long-term decisions based on good, sound analysis. Policymakers and energy leaders will be able to use the BEC2050 scenarios to test their assumptions about New Zealand's future energy mix, and therefore make more informed decisions.

## Scenarios specifically for us

The BEC2050 scenarios will sit within the international framework of Jazz and Symphony but are being developed specifically for New Zealand, so that they can inform decisions and debate around New Zealand's future energy mix. These scenarios will be developed based on our unique needs and economic, social and political inputs.

The BEC2050 scenarios consider a range of factors that recognises our unique place in the world. What might the world energy system look like, and our own local social, political and economic environment 30 years from now. The scenarios will consider the differing implications for New Zealand of Jazz and Symphony worlds. How would our economy respond to high versus low carbon prices? How could we benefit from technological development in other countries? What would it mean for immigration, population growth and the development of our energy resources?

Decision makers and policy experts can't rely on a narrow view of what might influence our future energy mix. That's why the BEC2050 scenarios are being developed by leading industry, academic and civil society representatives.

### ENERGY TRILEMMA INDEX RANKINGS AND BALANCE SCORE

	2012	2013	2014	TREND	SCORE
<b>ENERGY PERFORMANCE</b>	11	11	11	→	
 <b>Energy Security</b>	19	15	16	→	A
 <b>Energy Equity</b>	18	26	28	↓	A
 <b>Environmental Sustainability</b>	36	37	42	↓	B
<b>CONTEXTUAL PERFORMANCE</b>	5	6	4	→	
 <b>Political Strength</b>	4	1	3	→	
 <b>Societal Strength</b>	4	3	6	→	
 <b>Economic Strength</b>	27	33	12	↑	
<b>OVERALL RANK</b>	7	8	10	→	AAB

