THE WORLD ENERGY TRILEMMA

PROGRESS TOWARD BALANCED, SUSTAINABLE ENERGY REMAINS SLOW

Francois Austin

Energy sustainability is not just an opportunity to transform societies and grow economies, it is also a necessity – a prerequisite to meet growing energy demand in many parts of the world and to reduce the global carbon footprint. In order to build a strong basis for prosperity and competitiveness, individual countries must balance the three core dimensions of what Oliver Wyman and the World Energy Council have defined as the energy trilemma: affordability and access, energy security and environmental sustainability.

Our annual Energy Trilemma Index ranks 130 countries on their performance in meeting the demands of the energy trilemma and assesses how well countries are balancing the three dimensions. (See "The World's Top 25 Sustainable Energy Systems" on next page.)

As highlighted in this year's Index, the transition toward balanced and sustainable energy systems is slowly taking place. Over the past five years, positive developments have been recorded in terms of access to energy, share of renewables in the electricity generation mix and rate of energy-efficiency improvements. Global energy intensity has decreased by 4.2 percent and carbon dioxide emissions intensity has fallen by 4.5 percent in that time, while the global electrification rate has risen to 85 percent, with an additional 222 million people gaining access to electricity from 2010 to 2012.

Still, many countries face obstacles to achieving a successful balance across the energy dimensions. This year, only two countries, Switzerland and Sweden, managed to obtain an AAA balance score across all three dimensions. The United Kingdom's score was amended to AAB, as its energy equity performance suffered in comparison to other leading countries.

Several countries, including the UK, Japan and Germany, are identified on the 2015 Watch List as being likely to experience a significant change in Index performance in the near future. These positive or negative changes can be driven by deep transitions in their energy systems – be they of a regulatory nature, concerning the energy supply mix or related to infrastructure changes to improve the resilience of their energy systems. In 2015, South Africa and the United States were added to the negative watch list, while the Philippines and Serbia are now on watch for overall positive trends in the coming years.

The energy challenges faced by each country are unique and complex, as evidenced by the variability in performance across the trilemma dimensions and contextual factors. Yet the transnational nature of energy markets and environmental issues necessitates a perspective that extends past the country level.

Energy sector leaders have spoken about the need for a clear international dialogue and a robust, sustainable policy framework to ensure research and investment is targeted at delivering sustainable energy systems. Progress across the dimensions of the energy trilemma remains slow, and can only be sped up by creating frameworks that give certainty to investors.

FRANCOIS AUSTIN
is a London-based partner and head of Oliver Wyman's Energy practice.

This story is adapted from an article that first appeared on BRINK

THE WORLD'S TOP 25
SUSTAINABLE ENERGY SYSTEMS

What country leads the world in providing stable, affordable and environmentally sensitive energy? As the 2015 World Energy Council/Oliver Wyman Energy Trilemma Index results below show, 14 countries – Australia, Austria, Canada, Colombia, Denmark, France, Norway, Singapore, Spain, Sweden, Switzerland, the United Kingdom, the United States and Uruguay – rank within the top 25 countries across two core components of sustainable energy systems as defined by the World Energy Council and Oliver Wyman – energy security, energy equity and environmental sustainability. But only two countries – Sweden and Switzerland – rank within the top 25 countries across all three dimensions, according to the index which is based on an analysis of 60 data sets used to develop 22 indicators across 130 countries. To date, only one country – Switzerland – has managed to rank within the top 10 nations in balancing across all three dimensions.

- Leader in each of three dimensions
- Leader across two dimensions
- Top 25

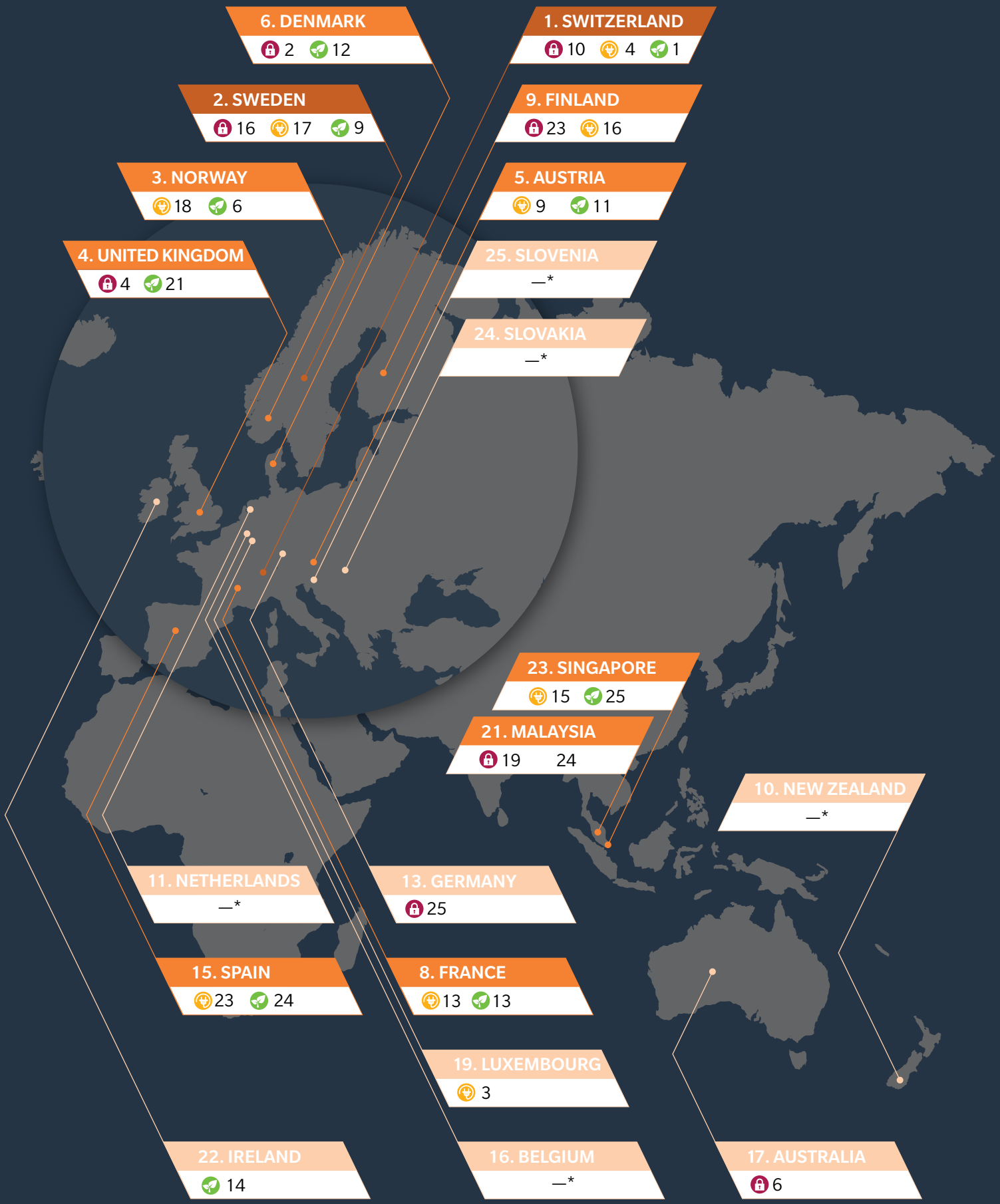
* Dimensional score is below 25, but overall balance score is high

Top 25: Energy Security
The effective management of primary energy supply from domestic and external sources, the reliability of energy infrastructure and the ability of participating energy companies to meet current and future demand

Top 25: Environmental Sustainability
The achievement of supply and demand-side energy efficiencies and the development of energy supply from renewable and other low-carbon sources

Top 25: Energy Equity
The accessibility and affordability of energy supply across the population

Sources: World Energy Council and Oliver Wyman


6. DENMARK
2 12
1. SWITZERLAND
10 4 1
2. SWEDEN
16 17 9
9. FINLAND
23 16
3. NORWAY
18 6
5. AUSTRIA
9 11
4. UNITED KINGDOM
4 21
25. SLOVENIA
—*
24. SLOVAKIA
—*
23. SINGAPORE
15 25
21. MALAYSIA
19 24
10. NEW ZEALAND
—*
11. NETHERLANDS
—*
13. GERMANY
25
15. SPAIN
23 24
8. FRANCE
13 13
19. LUXEMBOURG
3
22. IRELAND
14
16. BELGIUM
—*
17. AUSTRALIA
6