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Energy in crisis: WEC Executive Assembly and Trilemma Summit 2022

Background

It was an absolute privilege to attend this year's World Energy Council (WEC) Executive Assembly and Energy Trilemma Summit in Aberdeen Scotland. The event was divided into two parts. The first segment, the Executive Assembly, outlined WEC's work over the past year and what's install looking forward, including general house-keeping such as financing and membership concerns. The second segment, the Trilemma Summit, energy leaders from around the world gathered to discuss the global energy transition and how this has been impacted by multiple challenges.

During the two-day conference, I was fortunate to meet many exceptional leaders across the energy sector, from both the private and public sectors, including CEOs, policymakers, engineers, entrepreneurs, innovators and regulators to name only a few. This briefing aims to outline the broad conversations, themes and conclusions discussed by panelists and those at an individual level during the conference. This briefing is also on the back of Tina Shirr's findings on her visit to Europe in July. Since her trip, a lot has happened in the continent and this briefing aims to update the situation she outlined.

Context: what is happening around the world?

The opening statements of the World Energy Council Secretary General and CEO Angela Wilkinson, the outgoing Chair Jean-Marie Dauger and the incoming Chair Mike Howard, all addressed the elephant in the room: Europe's energy crisis. The series of gravely unfortunate events unleashed by Russia's invasion of Ukraine have resulted in a global energy, food, political and likely economic crisis. Yet this has not occurred in isolation. Inflation, labour shortages, industrial action, tit-for-tat protectionist policies and supply disruptions have all complicated the matter. Together, these phenomena create a *perfect storm* of sorts — a salient barrier to growth, geo-political stability and the energy transition. The current problem in Europe is reminiscent of the four horsemen of the 1970s: inflation, an energy crisis, labour disputes and extreme weather. In the short-term, the horsemen's return will inflict serious pain. In the long-term, just like in the 1970s and 80s, it will transform the energy sector.

What is driving the decisions taken by energy leaders and Governments? What are the actions that have been taken? What are the problems WEC member countries face? How does this impact their own energy trilemma?

Europe's energy shock

Before the crisis, the European Union imported 45% of its natural gas, 27% of its oil and 46% of its coal from Russia. By 2 September, all Russian natural gas flowing to Europe through Nord Stream 1 had stopped. As a result, Russia has reduced its gas supplies to the EU by close to 50% year on year since the beginning of 2022. The lack of gas has meant prices are more than three times higher than their five-year average for same time of the year. Gas prices spiked in August to €339/MWH, up from €45/MWH during the same time in 2021, and €22/MWH in 2020.

To fill the supply gap, Europe has been topping up its inventories with importing liquified natural gas. All EU countries have raced to fill their gas storage facilities. Stockpiles on average have reached 94%. If Europe is blessed with a normal or warmer winter, concerns are slightly alleviated. In this scenario, the International Energy Agency estimates gas storage will likely fall to around 25-30% by March. If a deep freeze curses Europe, Germany's federal energy regulator has warned inventories will cover only two months. Governments could decide to ration their stockpiles and exclude selling gas to their

neighbours. This could hurt countries like the United Kingdom, who have less storage capacity comparatively, while at the same time creating political strain within the European Union.

Europe now awaits the verdict: a cold winter or a warm winter. Fortunately, the weather is off to a warm start. Temperatures have been above the 5-year average across several countries, and the first two weeks of November are expected to be mild. Storage capacity for LNG is also brimming. LNG imports have surged 58% higher than the same period a month ago. There is so much liquified natural gas flowing into the continent that import facilities are struggling to keep up with incoming supply. As of October 22, 35 tankers are moored off Spain's southwest coast, while two are anchored off the U.K coastline waiting for fulfilment. Spain's national gas grid operator, Engas, has said it may have to reject some LNG due to overcapacity.

While import facilities are at near full capacity, countries are turning to floating storage and regasification units (FSRUs). Globally, there are only 48 FSRUs vessels. Tight demand has meant charter prices for a FSRU into Germany have doubled to $200,000 a day and rising (currently at $400,000). In September, two floating LNG terminals opened in the Dutch port of Eemshaven, easing some pressure. Governments have fast-tracked floating gas terminal projects, which take less time and are cheaper to build than onshore terminals. In total, 20 new terminals are proposed for the continent by the middle of the decade. Germany is leading the way with seven new floating terminals, with two arriving by the end of this year and the rest opening at the end of 2023. The German Government has said these terminals alone could cover a third of gas demand.

Yet infrastructure bottlenecks are not expected to subside for another few years. Building import facilities will take at least three years, and converting existing vessels takes around the same time. As it stands, warmer temperatures, steady LNG supply and ample gas storage has sent gas prices sliding to €104/MWH — a third of August's price spike.

This early good news does not solve the big question: What happens in 2023? Even if Europe escapes the winter of 2022 by withering down inventories to 25-30%, how will Europe re-stock its supplies to above 90% for a 2023 winter? Europe will need to find an extra 140 billion cubic meters of natural gas, the equivalent of 14% of all globally traded gas in volume. Therefore, every molecule of gas Europe burns today is one molecule it has to replace next year.

At the conference, speakers from around the world reiterated the significant uncertainty 2023 will bring, from energy supply and price uncertainty that is exacerbated by macro-economic uncertainty. A possible slowdown or recession will make it harder to access and afford capital, which is desperately needed to innovate and build the required renewable generation, both in Europe, the developing world and in countries like New Zealand. Chief Investment Officer of BlackRock Alternatives Investors, Jim Barry – who spoke on a panel titled *how do the recent events reinforce the need for a balanced approach* – mentioned how economic uncertainty and technological risk is a challenge to sustainable, secure and affordable energy. "The quantum of capital falls off a cliff once there is sizeable risk." He added, "Investors must release risk. With CCS and hydrogen there is technological risk. Private capital is limited in the early stage, as there is a higher risk when going first."

Due to worsening volatility and uncertainty that subsequently worsens risk, Mr Barry believes public capital has a role to play in the early stages, reducing risk and allowing private capital to flow. He mentioned involvement through soft debt guarantees as one example. Mr Barry used the case study of early solar and wind development two to three decades ago: "the initial subsidies at the beginning helped the progression we see in solar and wind today." However, despite governments alleviating risk, he was still confident that this crisis will speed up Europe's transition away from Russia and hydrocarbons.

Officials from the United States who attended the conference followed similar lines, if not so explicitly. Officials voiced the Inflation Reduction Act (IRA), signed into law August 16. The legislation provides $400 billion in new spending, with $250 billion for energy related matters. The IRA includes a plethora of tax credits, subsidies, grants and loan guarantees for EVs, batteries, hydrogen, clean electricity and

manufacturing to name only a few. The Biden Administration is hoping the IRA, combined with the recently passed Bipartisan Infrastructure Bill and the CHIPS & Science Act, totalling $2 trillion in new spending over the next ten years – will accelerate technological development in green energy more generally.

However, the lines between energy resilience, innovation and protectionism blur. The legislation has turned into industrial policy at an immense scale. Despite possibly reducing costs for green technology in the long-term through innovation, the subsidisation of EV manufacturing, the introduction of 'Buy America' rules, the continuation of high tariffs and trade restrictions may slow the transition. The European Union, who are faced with competing against full blown industrial policies from China and the U.S, is increasingly worried about its industrial base. French President Emmanuel Macron and German Chancellor Olaf Scholz have complained about America's lurch towards protectionism and have raised the possibility of retaliation.

At the conference, a voice cried out about the risks of working in silos. The attendee warned that the energy crisis inevitably means governments are going to do more and try accelerate the transition. But such actions can quickly turn into protectionism. Innovations are not shared, learning-by-doing is stunted and technological development paradoxically slows down. For instance, under the IRA, firms are not eligible for generous assistance if they do not manufacture in the United States, in particular electric vehicle manufacturing requires domestic assembly and will require certain materials to be produced domestically. The attendee who voiced their concerns was reassured by others who reiterated the balancing act between protectionism and energy resilience in a world with wobbly energy security.

Complicating factors in Europe: France, NIMBYs and BANANAs

Closer to Europe's shores in the Netherlands, lies one of the world's largest deposits of natural gas, in the region of Groningen. The reserve is estimated to hold more than 450 billion cubic meters of recoverable gas. According to Shell, there's plenty of room to extract around 50 billion cubic meters of gas per year — more than the total imported by Germany from Russia last year. However, politics has killed any proposal to increase Dutch drilling. The Dutch government fears the wrath of local homeowners who have suffered in the past when drilling has triggered earthquakes, costing close to €1 billion in damage to local infrastructure. The lobbying power of environmental and local community groups pressured the Government to act after a magnitude 3.6 earthquake struck the region in 2012.

Since 2013, production fell from 53bcm to only 6bcm. If the Government allowed the extraction of the remaining recoverable gas, its value is close to $1 trillion, according to Shell. Proponents of extraction say the reserve's value would be more than enough to generate large profits and compensate effected households generously, while reducing security of supply concerns. However, opponents are a significant bloc of Dutch voters who have increasingly sympathised with the plight of deeply frustrated Groningen residents.

Communities around the world voice similar worries, bugbears and protests against the development of energy projects, all to a varying degree. The Dutch example may not apply in this case, however, NIMBYism (not-in-my-back-yard) has increasingly had its sights on energy, both for renewables and hydrocarbon. Globally, two distinct cleavages have gone to war: the no wind turbines/solar panels *near me* vs no oil/gas *near me.* Yet the result is just the same.

At the conference, Claudio Seebach, the Executive Chairman of the Chilean firm Generadoras de Chile, voiced his frustration with the endless provocations of NIMBYs, who are well intentioned but who evidently blockade energy projects that would provide energy security and affordability. "We are not only seeing the rise and strength of NIMBYs, we are experiencing more BANANAs: build-absolutely-nothing-anywhere-near-anyone," said Mr Seedbach. He added, "They are everywhere," and provide a significant barrier.

The more turbines, panels, cables, poles and wires, the more likely NIMBY's will strike, as such infrastructure threatens the ascetic of a green hill or become intrusive eye-sights to a picturesque view

of a million-dollar property – at least in the minds of some. Mr Seebach comments received a head-nodding reaction, and an audience agreeing with the current lack of discussion on how this will blockade the work of policymakers and the energy sector more generally. Moreover, how Governments globally continue to favour NIMBYs over transformative projects initiated by the energy sector — by more explicit means through restrictions and bans — and less explicit means through not reforming outdated regulatory frameworks, excessive planning restrictions and slow consenting processes.

Another complicating factor in Europe's transition is the state of France's energy sector. France is usually Europe's largest net exporter of electricity to its neighbours, but back in May half its 56 reactors were offline due to maintenance. Suddenly, the country was a net-importer of electricity amid a continental energy crisis. Today, 26 reactors remain offline due to maintenance or corrosion on piping that cools reactors. Strikes caused by the cost of living has slowed progress at 18 of the reactors, where work has now been delayed. In September, the French utility firm EDF, expects output will still be below normal levels out to 2024.

Like Germany, France faced political pressure to shut down nuclear power stations following the Fukushima incident in 2011. In 2015, the French Government passed a law to reduce nuclear's share of France's mix to 50%. President Emmanuel Macron reversed this decision and drafted an energy strategy to bring nuclear back into the fold by building additional six reactors. Like Germany, they are finding it difficult to find the nuclear expertise it needs.

- ***Panel: Repiping the global energy market***

The uncertainty of war, inflation and market stability is evident. However, Europe can be certain about one thing: there's no going back after the *repiping* is complete. The continent has been forced to think, revise and implement measures all at the same-time, scrambling to find Europe's new supplier(s) of natural gas, oil and coal. Unless the Ukraine war ends and the Putin regime miraculously shatters, it's unlikely Europe will return to their Russian ways. Instead, the dictates of the Kremlin will be replaced by the direction of Royal Palaces in the Middle East.

His Royal Highness Abdualaziz bin Salman, the energy Minister of Saudi Arabia, joined the conference to have a candid conversation about Saudi Arabia's net-zero vision and the role hydrocarbons play in its vision. In the backdrop of his Royal Highness's dialogue, OPEC+, led by Saudi Arabia, announced it would cut oil production by 2 million barrels per day — frustrating Mr Biden who faces a competitive mid-term election. The Minister did not want to be drawn into this discussion. Instead, he reiterated Saudi Arabia's long-term plan and his views on why Europe faces this crisis.

Saudi Arabia wants to reach carbon-neutral status by 2060. According to the Minister, the use of hydrocarbons will remain strong and can only reduce gradually with time (hence Saudi Arabia's 2060 target). The target must be realistic, and alternative technology — like hydrogen — is still a long way from accomplishing energy security, according to the Minister. Despite his wary inclination towards renewable technology, the Minister remains confident that one day Saudi Arabia will be a hub for hydrogen production. The kingdom wants to take advantage of its ample sun resource to generate renewable electricity, both for hydrogen and to reduce its electricity generated from fossil fuels. The kingdom has a goal to increase its renewable mix to 50%. This is a tall-order; considering Saudi Arabia generates 99.8% of its electricity from fossil fuels. To try alleviate suspicion and accusations of green washing, the kingdom has committed to a $187 billion green economy plan, in particular mass solar projects. However, soaring *inflation* and *higher interest rates* provide two barriers to its hopes (a common theme mentioned at the conference from around the world).

Notwithstanding Saudi solar ambitions, the Minister believes there will be a place for hydrocarbons well beyond 2050, and to think otherwise is wishful thinking. The Minister wants the world to co-ordinate their efforts to develop carbon capture storage, direct air capture and low carbon fuels to become commercially viable on a large scale. He believes mineral mining is also a crucial component that is seldom mentioned. The kingdom is investing heavily in mining both domestically and internationally, to

ensure a secure supply of minerals and commodities that are needed for low carbon technologies, in particular, electric vehicles.

On the matter of Europe's energy crisis and the energy transition more generally, he was less diplomatic and more frank: "Be careful what you wish for," he warned, "we cannot operate without fossil fuels." The Minister and leaders from the kingdom have mentioned several times that a large reason for the crisis is that Europe, and the western world, has lacked investment in fossil fuels. He mentioned investment declines in fossil fuels. In 2014, annual investments in fossil fuel stood at $700 billion, by 2021, it was $300 billion. His Royal Highness's comments sounded similar to CEO Amin Nasser from Aramco, the world's largest oil company and Saudi firm, who recently said "the conflict in Ukraine has certainly intensified the effects of the energy crisis, but it's not the root cause."

Saudi Arabia is not worried about its golden goose, at least not for a while. Nether are its neighbours. According to the *Economist*, at the current prices, the six Gulf states could earn $3.5 trillion over the next five years. The United Arab Emirates (UAE) wants to expand its oil supply to 5 million barrels per day by 2025 and subsequently 6 million by the end of the decade. Despite global economic uncertainty and recession bells ringing loudly in 2023, the price of oil far exceeds the UAE's production costs.

Qatar, the world's biggest exporter of liquefied natural gas (LNG), has announced plans to increase its production by 43% by 2026. However, there are natural limits to Qatar LNG arriving in Europe, at least in the short-term. This August, the Gulf states sent Europe 2 million tons of LNG — which was only a fifth of the total it shipped that month. The rest is tied up in long-term contracts that Europe cannot get. However, new field developments in Iraq, Saudi Arabia and Qatar will pump new gas supply in the medium term.

Supply issues for oil are compounded by the EU's ban on seaborne imports from Russia, which will be in place from December. Moreover, the west faces constraints in refinery capacity. Spare capacity could arise in China. Sanctioned oil could find its way into Chinese and Indian refineries (or possibly already has). The processed product flowing through a "petroleum-laundering operation" — a term used by Emirati oil executive — would end up in Europe, thus making the process of sanctions complex. America is trying to meet the demand for refined product. Recently, the United States exported a record 6.4m b/d, which is a 1million b/d increase over a period of a year.

The repiping of the global energy market, as it were, will change the dynamics of global trade and geo-politics. Notwithstanding these changes, at the conference Former Executive Director of the International Energy Agency, Maria van der Hoeven, concludes the situation nicely: "the transition and the current geo-political events creates clear winners and losers. We should ensure the disparity between the winners and losers must not be vast and significantly imbalanced. Big winners and big losers threaten stability and the transition itself."

Fiscal measures

During the writing of this briefing, the European Union agreed to a price cap on fuel. The agreement ended months long negotiations between EU countries, convincing hesitant Germany and the Netherlands. The two countries believed market prices ensured gas was flowing to those most willing to pay for it, and thus needed it the most. The details of the agreement are yet to be decided and released.

Instead of mostly curbing demand, governments have subsidised energy prices to protect households and businesses. In total, the continent's governments have racked up a €700 billion energy bill, which includes the cost of subsidies, loans and nationalisations.

As noted in Tina Schirr's earlier briefing, in Germany, middle class households are progressively falling into energy poverty. Initially, the German Government spent about €30 billion to ease the cost pressure on citizens, introducing some measures to deal with raising energy bills, including a one-off 350-euro subsidy for taxpayers to help with rising energy bills, a fuel tax cut of 30 cents per litre for petrol and 14 cents for diesel and a 90-days of public transport ticket at nine euros per month.

In October, the German Government was hoping to introduce a gas surcharge of 2.4c per kW, the equivalent of an extra cost of €600 per household a year, to support struggling energy providers. Yet political backlash killed the proposal. Instead, the Government took another approach: introduce a big chest of money. At the end of September, Chancellor Olaf Scholz announced an additional €150-200 billion (7.4% of GDP) fund that will provide subsidies, loans and funds to relieve the energy crisis facing Germany out to April 2024, if necessary. To help pay for Germany's money chest, the Government has indicated it will extend its debt-limit lifted during the pandemic and introduce a windfall tax.

The U.K. Government has announced a significant £40 billion plan that will cap wholesale energy prices for businesses over the next six months. This caps electricity prices at 21.1pence per kWh and gas at 7.5pence per kWh. This price cap is the equivalent of a 50% discount. The Government has also capped household energy bills. Its plan would cap the average cost of energy at £2,500 a year, which is below the expected £3,548 households would have paid without intervention. Households also receive a £400 subsidy on top of the price cap. This plan for households will last two year. Both proposals could cost an immense £200 billion if the intervention were to last 18 months. For perspective, the U.K's COVID-19 response cost £310 billion.

The cost to the U.K could be larger than expected. The country has little gas storage. Britain's current storage capacity equals 2% of its annual demand, compared to the EU's 20%. Since the storage can be used and replenished, the country's storage could meet 4% of total demand, according to the National Grid. Due to faulty injection wells that were too costly to re-drill and rebuild a new facility, energy firm Centrica shut down its storage facility in Rough in 2017. The facility stored 70% of the country's storage capacity. At the time, the increasingly globalised gas market country gave the Government reassurance that any shortfalls could be covered. This week, Centrica announced they will reopen the storage facility due to concerns about storage. Yet the country still lacks ample storage. If the winter is cold, the U.K will rely on its neighbours for stored gas — which will come with a significant premium.

In the Netherlands, the Government introduced a one-time energy allowance of €800 for low-income households. VAT on energy was cut from 21% to 9%. A price freeze of €0.40/kWh for electricity and a €1.45 for gas has been introduced. Welfare transfers have been boosted. In all, costing €45 billion (5.3% of GDP).

Overall, the crisis has thrown textbooks and traditional economic orthodoxy out the window. Governments have pulled, and searched for, every policy lever they can find: cash transfers, price caps, market restructurings, nationalisations — the list goes on. As shown from the examples above, governments have focused on subsidising households. However, as basic economic theory would imply, the effects do not help the situation. For the first six months of 2022, subsidised energy meant Italians did not cut consumption across this timeframe. In Germany, a cold snap in September sent gas consumption 15% above the 2018-2021 global average.

- ***Panel: Never waste a crisis***

It is clear supply will be constrained in the short-term. Countries have no other choice but to reduce consumption, again in the short term. If not, blackouts are a probable possibility. However, to-date, price-caps have shown consumption has not reduced, as there is no incentive to do so. Yet some would respond to show energy prices are relatively inelastic, as shown with fuel consumption — people still need to drive to work.

During the *never waste a crisis* session, Paddy Padmanathan CEO of ACWA, Beautrice Buffon Vice Chair of WEC and Pedro Pizzarro CEO of Edison International, reiterated the importance of reducing consumption in the short-term or possibly longer through teaching efficiency to consumers. All panellists repeated the work currently done by the World Energy Council and the BBC, through an educational series called 'Humanising Energy.' The aim of this series is to do exactly that: humanise energy — telling the story of how energy has, and still does, transform lives across the world, alleviating poverty and fuelling living standards.

The project's target audience are those outside the sector who are regularly confused with jargon, figures and complexities. The panellists believe consumer education is important. They believe digitalisation provides valuable information to consumers. During an interactive session, Kim Yin Wong, CEO of Singaporean firm Sembcorp Industries, mentioned the integration of digital consumer-facing applications have shown more consumer awareness and education in his country. In particular, he mentioned how electricity consumption reduced when firms showed consumers their energy bills in comparison to the average household within their own apartment block.

Yet the biggest driver for declining consumption, not surprisingly and most obviously, was price. However, prices have been distorted as mentioned prior.

The panellists also discussed the need to teach and provide capital for decentralised energy solutions, especially for small communities in poorer developed countries that do not have reliable and accessible energy systems. Examples from around the world could teach these communities how such solutions could work in their own back yard.

- ***Panel : the future of hydrogen***

At the conference, Vaitea Cowan, Enapter co-founder and listed leader in Forbes 30 Under 30, discussed how the crisis has impacted hydrogen development in the EU. She mentioned, in particular, its impacts upon Enapter and the new challenges it faces in producing scalable on-site hydrogen AME electrolysers.

Not surprisingly, supply disruptions arising from COVID-19 still impact Enapter's ability to maximise production and innovate their products. The cost of materials have rapidly increased and the time to deliver such materials have worsened. Conversely, higher gas prices have reduced the cost differential between hydrogen and natural gas, making hydrogen more cost effective and attractive. Thus, there has been growing interest from governments and the private sector to invest in hydrogen. Yet on the flipside, production costs are still very much dependent on the cost electricity – which has grown significantly since the Ukraine conflict. However, the falling cost of renewables provides hope to companies like Enapter. The second hope is innovation and economies of scale. Hydrogen could follow a similar cost trajectory as solar cells and batteries, with the cost curve for electrolysers slopping downwards, making hydrogen more cost competitive.

Despite the energy crisis unleashing consequences upon hydrogen, the future looks promising. In total, 35 countries have introduced hydrogen strategies, including a multitude of EU countries. Furthermore, sizeable investments in hydrogen projects are sprouting globally; In July, Germany launched a global trading hub for hydrogen products, called Hydrogen Intermediary Network Company; The Kazakhstan Government has signed an agreement with Svevind Energy Group to build a 20GW green hydrogen plant by 2030; Last month, French utility firm Engie made their final investment decision in Australia's Yuri renewable hydrogen project, which is expected by 2024. These are just a few examples of how this crisis will intensify the development of hydrogen.

However, again, these projects are still far away from meeting a sizeable portion of demand in the short term – and challenges persist. Liquefying hydrogen eats 30% of the energy content of the fuel, and still is comparatively expensive. But most of the conference agreed that hydrogen should not be ruled out, and all options should be explored.

Concluding remarks

1. Europe's energy crisis is immensely consequential upon the continent's economic activity and living standards. It's exacerbating inflation, added fiscal pressure upon heavily indebted governments, creating political strain, and testing social cohesion.

2. The impacts are not isolated to Europe. Energy costs are flowing through to commodity prices and production costs, increasing the price of essential goods developed countries have taken

for granted. Higher costs for fertiliser and diesel, compounded by Ukraine's food production shortage puts developing countries at risk of a deadly food crisis. Subsequently, increasing the likelihood of domestic political instability, the risk of interstate conflict and regime change.

3. Governments in the European Union are, and already have, rolled out price caps, cash transfers and subsidies, to alleviate the cost of energy households face. Despite the large and expensive packages rolled out, the duration of support is mostly limited to over the next 12 to 24 months.

4. Europe is confident they have enough supply of natural gas to insulate the continent during this year's winter. LNG supply from the Middle East is increasing rapidly. However, the capacity to import LNG is limited over the next two to three years, as LNG terminals gradually come online. Despite winter of 2022/23 looking increasingly better than anticipated, the EU will find it difficult to refill its storage capacity next year.

5. The crisis is accelerating action on the energy transition, switching off Russian sources and building new renewable generation. Consequently, the latter will inevitably take time, as the supply of materials remains limited and the labour market remaining tight. Total LNG supply is likely to reach capacity in the short-term, as Qatar, Saudi Arabia and Iraq expands their drilling capacity – which again will take time to develop. However, market volatility and economic uncertainty is concerning the Middle East, who are becoming increasingly reluctant to run at full capacity.

6. European countries with their higher willingness to pay for energy, funded by their higher living standards and national incomes', will consume available global supply. Developing countries who do not have the means to purchase energy at higher prices will find it difficult to source supply. These countries are likely to turn to more carbon intensive forms of energy, for instance, coal.

7. WEC is working to 'humanising energy,' partnering with the BBC to communicate the importance of energy and provide simplified education to the public on sometimes complicated matters. WEC is also working on modernising the Trilemma and improving the metric. The details on updating the Trilemma will flow in due course.