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C H A N C E



**ENERGY TRANSITION:
ENERGY SECURITY,
AFFORDABILITY AND
THE IMPACT ON
CLIMATE CHANGE**



– THOUGHT LEADERSHIP

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ENERGY TRANSITION: ENERGY SECURITY, AFFORDABILITY AND THE IMPACT ON CLIMATE CHANGE

The transition from fossil fuels to clean energy to address the climate crisis was never going to be easy and involves expensive trade-offs between economics and climate. However, the Russian invasion of Ukraine has made that transition much harder as energy security becomes a major problem for many countries. David Evans, Senior Counsel and co-head of the Americas Energy and Projects Group at Clifford Chance in Washington D.C explores the legal and practical challenges that need to be considered.

The world has changed. We don't have abundant, free-flowing international exchanges of energy. Now, any discussion of energy transition trends must be considered in the form of a triangle (see below) in which the competing and often contradictory goals of energy security, minimising climate impact and ensuring energy affordability are in tension. And each country, sector, policy and transaction will involve different trade-offs among the considerations represented by the points on this energy triangle.

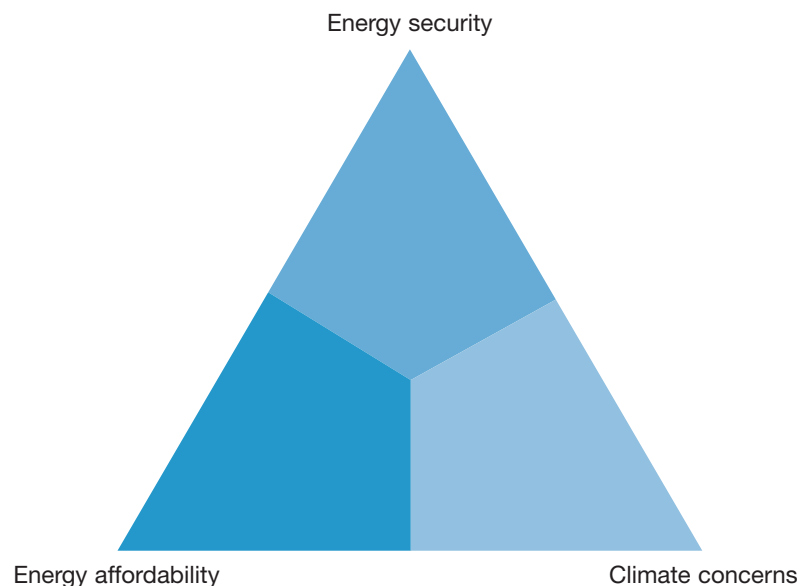
The resulting bottom line for the Energy Transition (which we still believe to be inevitable) is delay, higher costs and a greater diversity of energy types and sources.

Energy Security

If you want energy security, you start with indigenous fossil resources. And, if you don't have those, you choose your friends wisely. Broadly, this means that places with renewable resources – efficient solar radiation, steady wind and hydrology (uranium and enrichment, for some) – are being encouraged by the current crisis to accelerate the jump to non-fossil generation and have new-found friends looking for clean, new energy sources. But not all countries are equally blessed in resources and friends (if at all), so this is a very uneven solution.

Countries with fossil fuel resources have had a reprieve (of sorts) from the climate crisis, putting a pause on the talk of stranded assets. Their products are in

Energy Triangle



demand – especially natural gas/LNG – which is perceived as a cleaner fuel. For example, the US, with its 100-years' worth of shale resources, is expected to accelerate the production of natural gas and oil and to ship significant quantities of LNG to Europe to replace Russian pipeline gas, which the EU has said it will stop taking in 2027 (and which the Russians have already interrupted as a warning shot). The gap between this alternative energy planning and reality is huge (discussed below), but the point is that security concerns are driving new relationships as the global energy market disintegrates and re-aligns differently.

A focus on energy security will accelerate the move to "green" resources in some places and stimulate new (or renewed) fossil fuel production and use in other places. It depends more on market forces and the pure need to provide people with warmth and electricity than on government policy. In the short-term, someone has to replace the Russian role in Western energy supplies. Embargos don't mean that engines or industries running on fossil fuels stop operating or being needed.

Decisions driven primarily by energy security concerns will cost more, particularly in the short term. Removing (relatively quickly) the huge supply of Russian oil and gas from parts of the world means prices can only go up. In addition, the substitutes for Russian fossil fuel in many places are imperfect and inefficient. Liquefying US natural gas in Louisiana to -160°C and shipping it in a special tanker to a newly built regassification terminal in Europe is both expensive and a poor substitute for existing large-diameter pipeline gas from Russia.

What does this mean from a practical/legal perspective?

- A new LNG trade, built on long-term contracts, will develop between the US and EU; because of the need for long-term contracts to finance the LNG facilities, these arrangements will lock-

in the participants and create a long-term shift in the energy supply system.

- As they already have, governments will intervene to try to limit the price increases due to this shift, and consequent shortage, in supply; but if higher prices are the result of higher costs (and not opportunistic policies), whether this intervention takes the form of artificial price caps or windfall profit taxes (and the distribution of that tax to consumers), it will not be sustainable over the long term as well as being detrimental to future private investment.
- Certain governments will increase incentives to develop renewable resources both at home and abroad – doubling-down on clean energy sources. But there will be a lag between the price signals embedded in those incentives and the market's response and indiscriminate price regulation of power supplies could offset the development incentives.

Climate Change

On a practical level, the climate crisis has shown that the need to reduce carbon emissions, to reduce greenhouse gases (GHGs) and to reduce the warming of the planet, cannot exist in a vacuum, disconnected from the need to provide consumers with energy today from reliable partners at affordable prices.

As noted, some believe the current crisis is an argument for accelerating the adoption of climate-friendly energy technologies because it serves both energy security (being largely indigenous) and reducing GHG emissions. It also is helpful that higher fossil fuel prices make clean power more price competitive.

Even if doubling-down on climate-friendly sources of energy is the correct answer, not all of the energy transition tools that exist – renewables, clean hydrogen, new nuclear, transmission modernization, demand side management – are equally available and best suited for use in different countries and situations. The resource bases, cost, policy decisions and implementation times vary for each of these.

Finally, none of these decisions are binary, but involve numerous trade-offs among the energy triangle's considerations. For example, accelerating renewable power development certainly will improve energy security and the climate, but it likely will come at a higher cost and not soon enough to deal with the entirety of the current crisis. To be precise, some fossil-based substitute for Russian fossil fuel is needed, especially for industrial uses that will take longer to decarbonize (for example, with clean hydrogen).

Renewable power sources can improve energy security if resources are present in the country/region, but on a practical level, these resources can't be deployed immediately, nor in a uniform or universally-applicable manner that substitutes for fossil fuels.

The higher cost for renewable power and clean fuels is the "green premium" that Bill Gates addresses in his book, 'How to Avoid a Climate Disaster.' To some extent, this premium has been reduced by the increase in fossil fuel prices; it is as if the world imposed a carbon tax on itself. Even so, physics tell us that fossil fuels are the most efficient means to store and transport energy, so something will be lost in affordability due to pure "per Btu" inefficiencies. And, the developing world, arguing for a "fair" energy transition, sees climate change efforts (and their higher cost) as somewhat of a luxury - one which the developed world seeks to impose on it *ex post facto*.

What does this mean from a practical/legal perspective?

- Any significant adoption of non-polluting fuels will likely require, at least initially until scale and the market drives down prices, huge government support, in varying forms. This is not without cost to the economy or taxpayers.
- Where there is a significant delay in substituting clean energy for fossil fuels, governments and markets will need "bridge" solutions, such as LNG and reductions in energy consumption

through what will inevitably be unpopular demand side management.

- Consumers (including those philosophically supporting energy transition) will likely rebel if the shift to clean energy sources results in reduced or unstable power supplies (and higher costs).
- The infrastructure (e.g., transmission systems) required to support a heavier and faster reliance on renewables generation may not exist and may not be ready in time; some midstream sectors may require the creation of new sectors of energy transport, such as maritime transport of clean hydrogen from the renewables-rich South to the energy-hungry North via liquid hydrogen carriers.
- Hard-to-decarbonize sectors will face higher costs than power generation in reducing GHG emissions. These costs will be passed through to consumers.

Energy affordability

As we enter an inflationary cycle, inflamed (if not induced) by higher energy prices, as well as facing the prospect of a world-wide recession, the price of energy is a key consideration – just as important (or more so to some) as energy security and/or climate change issues.

For everyone, there is no escaping that energy prices (with some exceptions) are being set on a world-wide basis. The price of natural gas in the US reflects its competing use as LNG for Europe. World oil prices have increasingly little to do with the cost of production, but rather result from the competing demand for that product in many corners of the globe – especially now that the previous, well-functioning global oil trading market has broken down.

In attempts to limit the impact on their populations, governments are naturally disposed to regulate prices to consumers. Whether by direct price regulation, import controls and tariffs or taxation-and-redistribution, the goal is to soften the blow of higher prices. But these tools cannot override market fundamentals – a huge amount of fossil fuel has been taken out of some markets,

and those markets will face higher energy prices as a result. Even supplier economies, such as the US, will face higher prices, due to competitive pricing (as noted above) and crisis-induced inflation.

But the larger point here (besides the fact that everyone is facing higher prices) is that the developing world looks at energy affordability much more differently than does the developed world. If affordability is really a proxy for "providing people with affordable power", then the developing world – looking to a fair energy transition – understandably puts this as a necessary and first priority over climate change concerns. Electrifying villages in Nigeria that have never had power is more important than the other points on the triangle. As was clearly evident in the discussions at and around COP26 in 2021, the developing world is happy to adopt more expensive renewables energy solutions – if the developed world will help pay for it. However, it does not believe the developed world has the right, somewhat hypocritically, to "pull up the ladder" on fossil fuel energy sources (including coal), now that the developed world has used fossil fuels to create the current climate crisis.

This divided view on energy affordability and its relative importance helps explain the multifaceted trade-offs in the energy triangle – there is no single, correct place to "sit" in the triangle (or stay for long).

The developed world is probably willing to pay more for greater energy security, thus supporting government policy decisions which have set these forces in motion. For the developing world, energy security could be compatible with affordability if indigenous fossil fuels, hydrology and renewables resources are available, and they are not somehow punished for using those fuels by external parties.

The largest issue is that the developing world cannot afford to sacrifice providing energy for development and at a reasonable price to its population in order to be compliant with some global climate scheme (e.g., the Paris Agreement). For the developed world, there is both an ability and willingness (economically and

socially) to transition, albeit with some pain and dislocation along the way.

Practical/legal considerations:

- International institutions (e.g., the G-7, the World Bank, Development Finance Institutions) have implemented lending and support practices focused on meeting climate change goals, at the expense of affordability. Without access to these institutions for funding fossil projects, the developing world is pushed into dealing with lenders and developers without similar interests in balancing energy affordability and climate issues.
- It seems probable that, in developed countries, some of the higher costs of renewable power will be covered by subsidies; but this support will add to long-term inflation,
- Projects aiming at the export of gas, LNG and clean energy resources from the developing world will be required to provide some domestic supply arrangements as part of the over-all transaction.
- There is the danger that rate regulators and governments will over-shoot in their attempt to soften the price impacts of the current crisis to the point they discourage investment in energy capacity and innovative solutions by sending negative price signals (e.g., "windfall profit" taxes).

Conclusion

It has become popular in the US to say that its energy policy (which does not formally exist) is an "all-of-the-above" strategy – meaning we need and should use all forms of energy. But this isn't really true in the US or the world at large. It is more complicated than that. The energy triangle is a tool for understanding the trade-offs in the choices (and consequences of those choices) in the energy world we inhabit today as we progress toward the (still) inevitable (and hopefully fair) Energy Transition.



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