Creative Destruction, Orderly Transitions and Stranded Assets

BY NAWAZ PEERBOCUS

Popularized by Joseph Schumpeter, the term 'Creative Destruction' refers to "the process of industrial mutation that incessantly revolutionizes the economic structure from within, incessantly destroying the old one, incessantly creating a new one." Simply put, the creative powers of dynamic capitalism lead to the destruction of old ways of doing things, making space for new ways of doing things.

In many ways, the energy transitions we are witnessing today are sub-processes of a larger creative destruction process that will inevitably result in winners and losers. Energy transitions can take several years to several decades depending on the definition used. Defined as the time it takes for the sector-specific technology to reach 80% of energy consumption for a service (or the peak it did not reach 80%), the average historical duration of energy transitions in the UK was 95 years[1]. Future global energy mix projections suggest wind and solar energy will not meet this average duration for a successful energy transition. By 2040, in IEA's Sustainable Development Scenario, renewables (including solar and wind) will account for 31% of the global primary energy demand[2]. Wind turbine was invented in the 1880s and solar photovoltaics in 1954. Clearly it will take much longer for these technologies to meet 80% of energy demand. Meanwhile fossil fuels (oil, gas and coal) will need to fill in the gap and meet 60 per cent of the energy demand by 2040[3].

Duration is indeed critical in energy transitions. When the transition is gradual, adjustment costs are low. When it is fast, adjustment costs are high. Both cases can however result in stranded assets. These are defined as 'assets that have suffered from unanticipated or premature write-downs, devaluations, or conversion to liabilities'[4]. Stranded assets pose systemic risks to the economy and in the case of the energy system, they can create energy security risks. Given a choice, most countries would prefer a gradual orderly transition which minimizes the impact of stranded asset risks. According to Carbon Tracker, under a fast energy transition scenario to limit temperature increase to 2C, almost a third of the roughly $5 trillion in planned fossil fuel capital investment from 2018 to 2025 risks being stranded. Companies can plan ahead to ride the wave of creative destruction. Some have started to internalize the cost of carbon in their investment decisions. BP, for example, assumes a carbon tax of $40 per ton in developing world-wide projects.

Stranded assets are not a new phenomenon. In the power sector, monopoly utilities often incur stranded costs -i.e., their assets become stranded-when the power sector is restructured, and competition is introduced. In the real estate sector, changing consumer preferences have rendered many property assets redundant. Indeed, stranded assets can occur in many sectors of the economy including fossil fuels, real estate, agriculture, mining, utilities and transport.

There are a variety factors that can cause stranded assets. These include falling technology costs, environmental concerns, consumer preferences, government regulations and policies. The recent rapid cost decline in solar PV and onshore wind technologies have led to a large deployment of renewables in the power sector. This additional supply coupled with weak grid-demand have contributed to a low-price environment that have caused many utilities in Europe to book multi-billion-dollar asset impairment charges on their balance sheets. In 2016, asset impairment charges for European power and utilities companies reach 23 billion EUR[5], roughly 9 per cent of the market capitalization of the utilities. Such charges reduce the market capitalization of these companies and hamper their ability to raise capital to finance new investments. This in turn can impact energy system security.

Environmental, social and governance concerns have increased pressure on asset owners and asset managers to pay attention to stranded asset risks. Divestment from over-exposed sectors are driving investment decisions. Norway's $1tn sovereign wealth fund was recently allowed by the Norwegian government to reduce shares in selected coal and energy companies. Japan's Government Pension Fund, on the other hand, is advocating more engagement with companies on climate change rather than divestment of shares. The financial community also has a vested interest to better understand stranded asset risks. Central banks and financial regulators are being encouraged to assess climate related financial risks into the financial system and to integrate climate-related risks into prudential supervision[6]. Three dozen central bankers recently announced they will consider environmental factors when regulating banks[7].

It might seem too much to expect the creative destruction process to go hand in hand with an orderly energy transition. Yet time is the great moderator and it allows ingenious humans to plan and devise creative solutions. While the creative destruction wave oscillates through time, there is a dire need to better understand how energy transitions to a low-carbon economy create stranded assets. This knowledge gap needs to be filled to help policy makers develop appropriate policy and regulatory responses that are consistent with the economic and strategic priorities of the respective countries.

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