

SUSTAINABLE REGIONAL ENERGY BANKS,

“HOW TO INVEST IN OUR FUTURES”

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Changing Energy Paradigms

“Over the next decade, every aspect of national energy systems will be affected by changes in climate and energy policy, and financing, continuous technological advancement, and shifts in energy supply and demand. ... The energy transition can no longer be limited to incremental steps. It must become a transformational effort, a system overhaul, based on the rapid upscaling and implementation of all available technologies to innovate for the future.”
From 2021 United Nations report on Energy Transition

*“The current **energy networks are complex**, their establishment and operation require constant maintenance and upgrading, and their costs are considerable. The global energy transitions are multifaceted, unpredictable ... And require decades of steady, high-level investments and political commitments to yield major economic and social changes ... Nobody can offer a reliable estimate of the eventual cost of a worldwide energy transition by 2050, though a total suggested by McKinsey’s Global Institute of \$275 trillion between 2021 and 2050 prorates to \$9.2 trillion a year... implies an annual expenditure of **10 percent** of the total worldwide economic product for three decades, rather than 0.2 or 0.3 percent of GDP for the Marshall Plan (McKinsey 2022).”*

Vaclav Smil, “Halfway between Kyoto and 2050”

New Funding Frameworks

The urgency to build a new institutional framework focused on sustainable energy transitions and climate finance -- where the risks are greater than the rewards -- is recognized by most players in the field (World Bank, IPCC, energy consultants, IEA, KAPSARC). The argument for establishing regional sustainable energy banks is that:

1. The climate risks / impact vary significantly by region – MENA countries with strikingly different economic capacities will be particularly hard hit over the next fifteen years. In fact, each geographic area confronts enormous climate risks, different governance configurations, and mitigation strategies. (Northern Europe, Asia, Sub-Saharan Africa, Americas).
2. The risks of investing in new / proven technologies in large long-term projects are significantly higher than the medium term returns even in well managed, less volatile markets. Some regions have well developed new / aging infrastructure. Other regions, like China, are transitioning deliberately from coal-based economy to more sustainable future. While emerging / developing countries continue to lag and struggle.
3. The funds needed and financial / engineering expertise required are beyond the capacity of many institutions and firms operating in the energy / climate arena. In most OECD countries government budgets are in deficit and debt levels high. And less developed countries have little access to capital and higher project risks.

The constraints on investing / funding the energy transition appear insurmountable, so that the only progress is more urgent reports and calls for action (IPCC, IEA, World Bank, OECD, IMF). We need more realistic investments, practical steps, and new regional funding frameworks.

What Regional Energy Banks Do

Regional Energy Banks are separate management entities focused solely on funding the energy transition in different parts of the world. In some cases, they may fall under other banking structures (World Bank, regional development banks); or be part of regional policy and development efforts (EU, MENA, Asia). The management framework reflects the political economy of our heterogeneous world; however, the mission and operating goals are similar.

1. Structure and develop energy policies for regional bank participants. This will vary enormously by region from building codes, electricity and water subsidies / incentives, carbon market prices, industry carbon footprint targets, food and agricultural policies, transportation electrification / mix. Energy and climate policies must, of course, be balanced with the on-going operational details of governance (schools, social services, defence, and services). The capacity of each region to develop and reach policy consensus remains an ongoing and ever-changing challenge.
2. Analyse information and build a rich knowledge base. The energy mix, technology, and models / scenarios are in constant flux, so much of the effort is focused on accessing a deep base of information that is available from consulting firms and international institutions. Evaluating and absorbing the information is challenging since some of the analysis is contradictory, uncertain, and often advocating certain solutions. Green hydrogen, small nuclear, solar, offshore wind, carbon capture, hybrid transportation, storage. Using information to depict a nuanced, flexible view of our regional energy worlds is key to policy and longer-term investment priorities. There is no one simple solution, and one size does not fit all players.

3. Mix of money and long-term returns. Evolving policy and information maps allow regional energy banks to establish investment priorities and return targets. Again, the objective is to structure / fund the energy transition with reasonable returns. Here is where we meet the funding challenge – attracting a consortium of investment partners with different objectives – since returns at best match long-term utility performance (7-9 % in western OECD countries). Attracting a portfolio of investors for Sub-Saharan Africa will necessitate more grants and World Bank participation, whereas EU countries may be willing to pay for higher energy costs to meet expected EU returns. The Americas and USA are more problematic with a more fluid political landscape and higher market return pressures. The energy funding challenge is how do you attract much more money to invest in a long-term transition.

We propose to start with a merchant banking prototype – building on the experience in the Middle East and Europe – and roll out a tailored regional energy banking structure once we have the experience and a realistic track record.

What Energy Banks are not:

1. Trying to solve the climate justice issues that have been highlighted in World Bank reports and actively discussed at the latest COPS. Climate justice is front and center for many countries and part of many development plans. However, the investment in energy projects and technologies should alleviate some of the climate justice inequities.
2. ESG funds or green investment vehicles that promise good returns and lower portfolio carbon footprints in global markets is not sufficient. Experience has shown that this marketing pitch where the promise of risk adjusted ESG returns that funds the transition and magically allocates low-carbon investments is unrealistic.
3. Fully loaded carbon price in a global market that finds efficient allocation of environmentally costed portfolio is unlikely. Again, the estimates of efficient carbon price vary considerably (\$50 to over \$1000 per ton) with significant policy differences by region. In terms of externalities and costs, we are clearly in second best worlds. Some carbon markets will be pursued diligently in the hopes that others see the light while others will opt for a mix of subsidies and penalties.

Regional Energy Bank Example

The how and why of regional energy banks is best illustrated if we look at the implementation of cleaner hydrogen in Europe (Germany) and the Middle East (Saudi Arabia). In Germany, we have an installed energy pipeline network, existing steel and cement companies coupled with an ambitious climate targets and functioning carbon markets. The challenge is to decarbonize industry and invest in a greener hydrogen supply chain that will provide a competitive low carbon energy to the manufacturing sector. To achieve these objectives, Germany needs to increase its sustainable electricity grid, reconfigure its hydrogen production supply chain – repurpose gas pipelines, accommodate hydrogen imports, increase green hydrogen production – and re-engineer its steel and cement production methods. All these efforts take significant changes in regulations, standards, and large investments. Some subsidies based upon auction markets will set prices while other incentives may attract new capital (mostly private), assuming somehow that there is a competitive green / regulated EU steel and cement market that is profitable.

In contrast, the Middle East and Saudi Arabia has the advantage of investing in an emerging and new hydrogen transportation and manufacturing sector that will first serve its regional markets and then seek out export markets in Europe and Asia. Its competitive advantage is the low cost of most energy sources (fossil fuels, wind, solar) and its geological capacity to expand carbon capture technologies while reducing its fossil fuel carbon footprint through production efficiencies and new designs. Building out a hydrogen supply chain in a command market economy allows Middle Eastern players to take advantage of its newly installed supply chain – utilities, wind and solar farms, pipelines, and ports – that are strategic investments in their diversifying economies. The funds invested – while substantial – are part of the regions' longer term developed plans based upon its low cost of energy and ability to produce low-carbon hydrogen for domestic and export markets. As a market leader in an expanding hydrogen market the region should prosper where long term fifteen-year returns justify the billions of greenfield investments.

This study shows how we can FUND our transition with Regional Energy Banks over the next fifteen years.

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