Energy Transition Dialogues

DAILY BULLETIN

THURSDAY /// APRIL 14th

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- SHELL AGREES DEAL ON PRODUCTION OF HYDROGEN WITH UNIPER
- SAUDI ARABIA TO ESTABLISH REGIONAL CENTER FOR CLIMATE CHANGE
- NEW PARTNERSHIP TO MAP OUT GLOBAL WIND ENERGY WORKFORCE
- SUN RISES ON CHILE UNIVERSITY ENERGY TRANSITION RESEARCH
- DR. SULTAN AL JABER VISITS ENVIROSERVE, UNILEVER'S FACTORY IN DUBAI
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VIEWS YOU CAN USE

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Chief Executive Officer
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Middle East Hydrogen Sector is Accelerating Faster than Most

Looking at the past year, there have been massive advancements in the regional Hydrogen sector – we have seen pioneering projects confirmed such as the NEOM green hydrogen project in Saudi Arabia, and other government-led initiatives in countries such as the UAE and Egypt. It shows the great energy transition is happening faster than expected in the Middle East.

GCC countries should tap the potential by deploying local large-scale production capacities and develop hydrogen ecosystems. By doing so, they can generate annual revenues of up to $200 billion and one million jobs by 2050. In the short-term, the most attractive activity to localize for GCC countries are the electrolysers, which represent 20%-40% of the total value chain cost.

The MENA Hydrogen Alliance (MHA), which was created by Dii, is bringing together private and public sector players and academia to kick-start a green hydrogen economy based on low-cost value chains in the region and beyond. The Alliance currently includes fifty companies and organizations from twenty-five countries, and many members were involved in signing several agreements in Abu Dhabi recently.

The UAE Minister of Energy & Infrastructure, HE Suhail al-Mazrouei, has announced that the country is aiming to capture around 25% of the global hydrogen market with hydrogen produced both by electrolysis and from natural gas. The MHA port initiative will play an important role in achieving this because marine logistics will underpin the most successful Hydrogen hubs -- with this, Abu Dhabi Ports and Italy's Port of Trieste joining the Alliance is a major development.

As well as Port hubs, another important initiative will be the establishment of standards through a respected industry certification programme. We need credible certification on the entire lifecycle of Hydrogen. It can start with bilateral agreements to coordinate an internationally accepted scheme to make trades happen. The MHA has launched a working group on certification, with representation from the transport and storage industries. These kinds of international partnerships are crucial because without such schemes, nothing will happen. ■

**Parahprased Comments*

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China's 2021-2035 Blueprint Focuses on Capacity Building and Demonstrative Applications

In our earlier report of "Hydrogen in China: Hope or Hype?", we reviewed over 50 local hydrogen development plans and concluded that they were "over-enthusiastic zealots" on the part of regional governments. We observed that in contrast to the frenzy of the local authorities, the central government, represented by the NDRC/NEA, has shown more calmness and cautiousness. "They are weighing out, in their forthcoming hydrogen strategy or plan, how to encourage technology development while not adding 'fuels' to the fire that is already burning a lot of money across the country."

Now the much-awaited plan is out. Released by the NDRC/NDRC on March 23rd, the "Mid-to-Long-Term (2021-2035) Hydrogen Development Plan" (the Plan) clarifies China's hydrogen development priorities and focal areas. With this Plan, China joined other major economies (US, European Commission and Individual EU Countries such as Germany, UK and France, Japan, Australia, Korea, Canada, etc.) in having a national hydrogen strategy.

What are the differences between the Chinese plan and those of other countries? Well, this Report does not intend to answer this question, but tries to help you make your own judgement by proving the following key elements of the Plan.

A much watered-down ambition

The Plan acknowledges the importance of hydrogen as a clean energy carrier with potentially big contributions to the netting-zero goals, but putting a strong emphasis on the fact that conditions are not yet mature for large-scale deployment. The highlighted inadequacies China faces include innovation capabilities, sophisticated equipment manufacturing, critical core technologies, key components, and high cost. For instance, the end-user cost of hydrogen
today in China is between RMB 50-80/kg (US$7.8-12.6/kg), much higher than oil-derived fuels.

Taking into consideration all those constraints and with an attempt to cool down the overheated local enthusiasm, the Plan sets rather qualitative and aspirational targets for 2025, 2030 and 2035:

- By 2025: build a complete industrial value chain with both "grey hydrogen" (industrial byproducts) and "green hydrogen" (from renewables). Emphasis is given to technology innovation aimed to master the core technologies and acquire manufacturing processes, and improve hydrogen's competitiveness through demonstrative applications. The target is to have 50,000 hydrogen fuel cell vehicles on road, matched with adequate number of refueling stations, and 100,000-200,000 tons of green hydrogen produced.

- By 2030: construe an integrated innovation system and industrial value chain, where green hydrogen is embedded in broad areas of applications.

- By 2035: form a hydrogen application ecosystem covering mobility, energy storage and industrial applications, with the share of green hydrogen in total energy use significantly increased to play its due supporting role in energy transition.

As shown above, specific numerical targets are only set for 2025. As of July 2021, China had only 1,500 hydrogen vehicles on road. Growing the fleet to 50,000 represents a growth of 240% per year over 4 years, but it remains negligible given China's 395 million vehicles fleet in total. 100,000-200,000 tons of green hydrogen production will require an installed electrolysis capacity of 1-2GW, much less than the EU target of 6 GW by 2024. It represents a much-watered down ambition, given China's solar and wind manufacturing capabilities, and particularly in comparison with all the local governments' hydrogen plans.

Green hydrogen:

The Plan has clearly spelled out renewables as the future source of hydrogen supply, although today almost all China's hydrogen production is sourced from coal, gas and industrial processes (see Table 1). The growth rate of green
hydrogen from almost zero in 2021 to 100,000 - 200,000 tons within 5 years may appears phenomenal, but not really so when compared to China's existing total hydrogen production volume (33.42 million tons) nor to its total energy consumption of 3,400 million tons of oil equivalent.

Consequently, the essence of the Plan is much more about capacity building rather than any material target on hydrogen development.

SOURCE: CN Innovation (www.cn-innovation.tech)

FULL REPORT HERE

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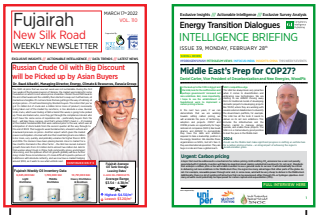

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