تحت رعاية صاحب السمو الشيخ محمد بن زايد آل نهيان، رئيس دولة الإمارات العربية المتحدة
Under The Patronage of H.H Sheikh Mohamed Bin Zayed Al Nahyan, President Of The United Arab Emirates

ADIPEC أديبك
نادي الشرق الأوسط للطاقة
Middle East Energy Club

Host
أدنوك
ADNOC

ADIPEC 2022 LEADERSHIP ROUNDTABLE SUMMARY

Cross-sector partnerships for a rapid transition to clean global transportation

HOST PARTNER

Environmental Defense Fund

CONTENT PARTNER

BAIN & COMPANY

www.adipec.com/roundtables

ADIPEC, Brought to You by: dmg::events

Foreword

HOSTED BY

Hisham Mundol
Chief Advisor - India
Environmental Defense Fund

Two important themes have emerged as the global economy wrestles with the energy and climate crises. The first is that every credible analysis of what it will take to achieve the goals of the Paris climate agreement points to a future that uses less fossil fuels than we do today. The second is that economic, national security and equity realities around the world mean this energy transition will look different for each nation and sector. This is especially true for transport.

Compared to other sectors, for example, shipping and aviation are still in the early stages of the transition as they require wholly new fuels to achieve dramatic emission reductions. The capital that will scale promising clean fuels is just beginning to flow. Standards are just now being considered.

New fuels are being developed and tested and must ensure lower transport emissions do not come at the expense of food, forests or health. After all, a sustainable energy transition is one that improves ecosystem protections and community health as we deliver zero carbon energy.

Still, the urgency of the energy and climate crises demands we accelerate this transition. It is clear there is significant national security and corporate shareholder value potential at stake.

As such, this effort will require a new level of partnership and collaboration among key players in the sector: the national governments who set transportation and emission policy, the companies who move our goods and people, the energy buyers and sellers who fuel our ships and planes, the investors who will finance this, and the innovators who are developing low- and -no-carbon transportation solutions that will drive our economies.

It will require boldness, as well. Half-measures and timid steps will not transform the transportation industry, and they will not achieve the emission reductions required. Now is the time for leaders and innovators to work together on the policies, technology and strategies that will push this industry into the future.

"Now is the time for leaders and innovators to work together on the policies, technology and strategies that will push this industry into the future."

The ADIPEC Leadership Roundtable discussions are held under Chatham House Rule.

Cross-sector partnerships for a rapid transition to clean global transportation

MODERATED BY

Peter Parry
Chairman of Global Energy and Natural Resources Practice
Bain & Company

As context, the transport sector accounts for nearly 40% of global Co2 emissions. Achieving net-zero will be close to impossible without far-reaching reforms to land, sea and air transport that upend a fossil fuel-based established in 1892. Transition will depend as much on partnerships, market structure and business models, as the performance of clean transport technology.

The future of transportation will be more fragmented and complex as a globally commoditised oil marketplace is replaced by a patchwork quilt of independent markets. Decarbonisation strategies will be localised, as geographies adopt locally viable solutions based on their resources, access to secure energy sources and infrastructure. Regulations, both carrots and sticks, will diverge across and even within states. Major policy reforms like the US Inflation Reduction Act will have far-reaching and unanticipated consequences.

Thus far, decarbonisation of transport is moving slowly due to a causality dilemma created, as each stakeholder waits for the others before making the bold investments needed. Manufacturers and consumers of low emission vehicles wait for certainty that supporting infrastructure will be available, while energy players await signs of sustained demand before building the infrastructure. Because transport infrastructure and vehicle manufacturing are industries that plan, develop and deploy across decades, not years, the longer business models reflect business-as-usual, the more our transport system will be locked into a fossil fuel-based model.

The coming years will require bold companies to pioneer new solutions and governments to explore new ways to incentivise behaviors to meet their climate ambitions. New energy solutions will require major capital deployments in conditions of admitted uncertainty. To enhance the chances of success, project leaders must coordinate along the value chain to ensure supply and offtake materialise as businesses transition. They must work with government and local stakeholders to maximise economic potential and drive new business models for the energy transition, for the benefit of all parties. Ultimately, only through a new era of partnerships can we achieve rapid transport decarbonisation.

Leadership Roundtable Review

This leadership roundtable discussed the role of partnerships in helping diverse stakeholders align around a project opportunity for their mutual benefit. The key points covered during this roundtable include:

- What business models unlock economic potential for new energy projects?
- What are the top agenda items for each of the decision-makers who need to be engaged to make your project a success? How should stakeholders identify and prioritise these agenda items?
- What kinds of disruptions will partners need to deal with, both in the project phase and operating lifetime?
- How might technology evolution introduce challenges as early projects give way to more efficient subsequent waves?
- What is the impact of a non-linear energy transition on a project and partnership? To what extent should partners focus on short-term opportunities versus pushing for a long-term focus?

The expert discussion focused on concrete ways to build more effective partnerships. Key insights were as follows:

To decarbonise transport, novel and unexpected partnerships will be crucial. For decades, energy players have relied on partnerships to de-risk projects, but these have tended to focus on specific points in the value chain and close industry adjacencies, such as oil companies joint-venturing on shared infrastructure. Decarbonising transport will require novel projects, which, in turn, bring new stakeholder management challenges, new complexities, and untested models.

Transport decarbonisation will require broad and cross-sector partnerships that often have little precedent, such as a pharmaceutical company seeking a partner to install and provide power for the electrification of its fleet, or a

developing country seeking support on building the skills needed to operate and maintain an EV charging network. Stakeholders need to think laterally about the kinds of partnerships they might need and the new customer opportunities decarbonisation might bring. It can be challenging to operate outside of the usual ecosystem: for instance, a port operator that wants to build a hydrogen bunker where no one yet operates a hydrogen fueled vessel will need to partner with a shipping company as well as other ports where that company ships.

Successful partnerships will lay the foundation for new ways of engaging governments, suppliers, customers, and competitors to create new business opportunities. They need to be profitable for the participants or no one will move into that part of the value chain. Businesses must think system-wide, both across the value chain and the larger operating ecosystem. They must become comfortable with engaging with stakeholders, including government, and in some instances will need to develop the capability and boldness to lobby the policymakers or regulators for change.

Winning solutions will be scalable, enabling partners to grow into the energy transition across geographies and sectors, not because they landed on a winning technology, but because they found a winning partnership model.

Ambitious thinking can unlock new forms of value. Successful transport decarbonisation hinges on economies of scale, which, in turn, requires bold projects and an openness to unexpected opportunities. Once low-carbon facilities are available, there could be surprising sources of non-conventional offtake demand. A hydrogen facility at an airport, for instance, could be useful not just for aeroplanes but forklifts and ground transport as part of a balanced decarbonisation program that evaluates the most effective solution for each application. Seoul-Incheon International Airport is an example where liquefied hydrogen is used for many purposes, including ground logistics, baggage tractors, forklifts, pods, super tugs and shuttle buses. In addition, high-performance trucks can store up to 300 litres of liquid hydrogen that allows refuelling to be done directly on the tarmac in a few minutes. It is critical to note, however, that hydrogen is itself an indirect greenhouse gas, which contributes to climate change if leaked or vented. As such, it must be deployed carefully using science-based guidelines and best practices.

Smaller offtakes can supplement primary revenue streams, improving the scale economics of low-carbon assets. Identifying these types of partners can be challenging for project managers. Partnerships to enable supply-demand coordination, such as advance purchase / supply agreements and shared economics, are critical to de-risk investments.

The importance of carefully crafted policy. Governments have the potential to promote the transition to clean transportation by deploying the appropriate financial incentives, like tax breaks, direct funding or investments, and advance purchase commitments, as well as non-financial incentives like accelerated planning and skilled immigration. Governments should not be picking the winner: proper policies should be solution agnostic and technology neutral. Governments can also join partnerships as active members, but policy must be carefully crafted and consistent to provide greater certainty for investors. Energy assets are capital intensive and long-term; investment requires stable policy environments to avoid "stroke of the pen" risk so that revenue streams can be anticipated for ~20 years after start-up to justify investment.

> *"Successful partnerships will lay the foundation for new ways of engaging governments, suppliers, customers, and competitors to create new business opportunities."*

Policy decisions should not make an incentive for low-carbon transport compete with incentives for fossil fuels. This is one factor driving significant divergence in, for instance, EV uptake across countries. EV penetration is accelerating in Thailand due to financial incentives to the tune of TBH3bn (USD91mn) this year, but growth is hampered in Malaysia, where fossil fuel subsidies are 5x higher. Meanwhile, active farm and oil lobbies in the US have effectively displaced methanol as a fuel / fuel additive, constraining the biofuel market there. These sorts of entrenched interests must be re-evaluated in the context of public interest for the energy transition.

At their best, policies promote entrepreneurial thinking and experimentation and give the private sector the space to develop novel business models.

Governments and large industrial users should also utilise procurement for their own needs more than subsidies to jump start the low-carbon transport industry and its supply chains. To quote an activist angel investor, "don't give them money, give them contracts."

Finally, policies must reflect the local reality - such as level of local industry, skills, or regulatory enforcement - because an approach in one context may fail when transposed to another. California's Low Carbon Fuel Standard is an excellent policy for that locale, but may not be the best fit for a developing country due to more limited infrastructure, investment, enforcement, administrative capacity, and severe social inequity. Additionally, in many countries, regulations and permitting processes need to be revised to avoid red tape as well as address project-blocking in developing low-carbon infrastructure without compromising the public interest. These regulations add years to the timeline for new energy deployment.

To succeed, partnerships should focus on common interests and shared benefits. Industry players all see value in supporting different clean transportation pathways, but they have their own interests and trajectories which are not always aligned. Energy players may see opportunities to decarbonise the current fleet of vehicles through certain pathways (e.g., efficiencies, alternative fuels) that differ from those pursued by vehicle manufacturers focused on decarbonising new vehicle sales (such as via electrification). In the partnership era, stakeholders need to work together in finding their shared interests and overlapping agendas. Given current consensus on the need to decarbonise energy, it is crucial to think proactively about alignment. For governments, this may be jobs and skills; for oil and gas companies, the chance to be part of cutting-edge net-zero projects. Parties must be bold to ask for what they need from their partners to ensure project success.

Trust, transparency, common standards, and terminology can lead to system-wide thinking. To be able to collaborate, industries with different priorities must first, be able to talk to one another, then trust one another, get their own needs met, and then share project risks and rewards. They must also be able to come together to articulate their business needs to government. Equally important, industry needs common standards – based on the best-available science and data, codified by government – to support the development of new technologies and fuels. For example, as one participant noted, it is currently not well understood if or how natural gas pipelines can be retrofitted to transport hydrogen responsibly. Such standards create the foundation for stable and consistent regulations across jurisdictions, another critical enabler.

KEY TAKEAWAYS:

- To decarbonise transport, novel and unexpected partnerships will be crucial
- Ambitious thinking can unlock new forms of value
- The importance of carefully crafted policy
- To succeed, partnerships should focus on common interests and shared benefits
- Trust, transparency, common standards, and terminology can lead to system-wide thinking

ADIPEC أديبك
نادي الشرق الأوسط للطاقة
Middle East Energy Club

Host
أدنوك
ADNOC

2 - 5 October 2023

Abu Dhabi, United Arab Emirates

For more information or to apply to participate in the Leadership Roundtables at ADIPEC 2023, please contact **adipecroundtables@dmgevents.com**

dmg events
Office C40-L06-10, Level 6, Tower 4
Yas Island, Yas Creative Hub
PO Box 769256, Abu Dhabi, UAE

T: +971 2 4444 909
F: +971 2 4444 383
E: adipecroundtables@dmgevents.com
W: www.adipec.com

ADIPEC, Brought to You by:

dmg::events

#ADIPEC
#ADIPEC2023
#ADNOC