Oman National Net Zero Plan
&
Oman Sustainability Center

23 October 2022

Oman National Net Zero Plan

Royal directives

His Majesty the Sultan Haitham bin Tariq AL Said, official announced royal directive *

"Oman sets 2050 as its Net-Zero year target and establishing the **Oman Sustainability Centre**"

National effort

- It has made national efforts to address the impacts of climate change through::
  - Renewable energy projects
  - The remarkable investment in green hydrogen
  - Focusing on raising green spaces such as planting
  - Taking care of nature reserves and other related projects

Oman Vision 2040

Oman Vision 2040 confirmed this through the priority of "Environment and Natural Resources"

Strategic Direction

The national net zero comes to express the Sultanate of Oman's existing orientation towards sustainable development

*11 October 2022

Definition of Net Zero

Net Zero: The balance between Greenhouse Gas Emissions due to burning fossil fuels and the processes of reducing those emissions in a certain period of time to the equivalent of zero.

Net Zero is one of the most important components of the national sectoral strategies (industry, urban planning, energy and transportation, etc.)

Climate Change poses a challenge to humanity in general, and to countries that have built their economies on oil wealth in particular

Enablers

1. Providing a stable investment environment and attractive incentives
2. Policies and Regulatory Frameworks
3. Preserving the environment and reducing the effects of climate change
4. Energy Efficiency
5. Renewable energy

Strategic Direction of the National "Carbon Management" NZE Lab Framework

Achieving NZE plan for the Sultanate of Oman by 2050 Year

Strategic Direction

Main Pillars

Cities and Buildings Sector	Transportation sector	Industrial sector	Energy Sector	
			(Oil, Gas)	(Electricity)
Building code	Land transport sector	Reducing energy consumption and gas utilization	Enhancing the efficiency of gas production and use	Sustainable Renewable energy
Smart meters		Carbon capture, utilization and storage (CCUS)	Flare reduction	Electrical Interconnection
Renewable energy, green zones	The transformation to electric vehicles	Controlling methane emissions by developing the technologies used	Carbon capture, utilization and storage (CCUS)	Waste to Energy, biofuels energy
Specifications, standards	Public transportation	Electrification process, Circular Economy	Controlling methane emissions by developing the technologies used	Efficiency of generation, transmission, distribution
Energy Efficiency				

Projects and Initiatives

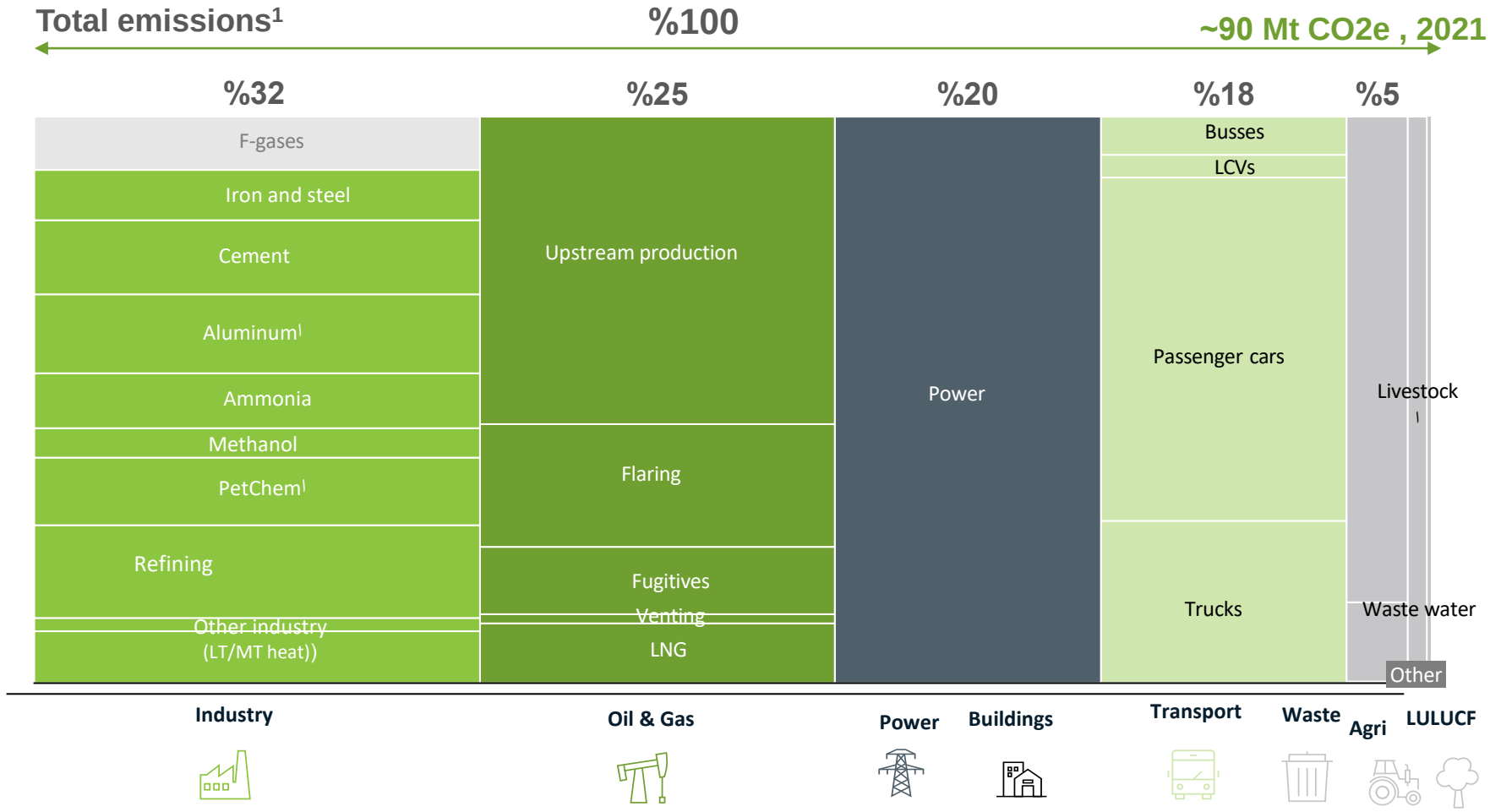
Marketing and Promotion	Funding and incentives	Local Content	Infrastructure and basic services	Legislations and laws Governance
Technology	International cooperation	Education, awareness and communication	Building capabilities	Data and reports , Monitoring and Evaluation

Enablers

49 initiatives and projects have been approved for the main sectors

Source: Carbon Management Lab

95% of Oman's total net emissions in 2021 were due to emissions from the “Industry, Energy, Transportation and Building" sectors



The Sultanate of Oman is currently highly dependent on natural gas, especially in the industrial sector and power generation

In business as usual BAU, GHG emissions are expected to increase by (10-20%) from (2021 to 2050)

1. The international maritime and aviation industry are not considered here, in line with the remit of the Paris agreement

Source: Carbon Management Lab

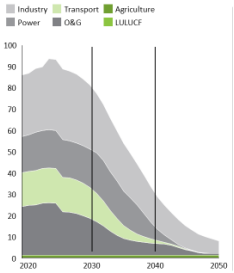
*Land Use, Land-Use Change and Forestry (LULUCF)

Analyses in progress: Pathway assessment across objectives

Environmental sustainability

5. Environmental sustainability: In the balanced transition scenario, decarbonization until 2030 accounts for x% of the total pathway, driven by sector X,Y,Z

Pace of GHG emission reduction per sector, 2019-2050, MtCO2e2

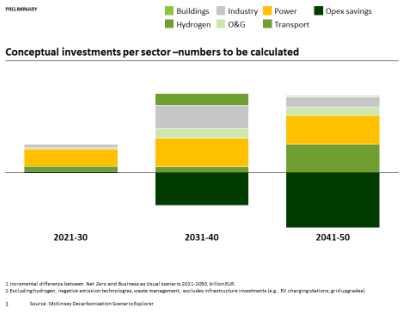


Sector	Decarbonization vs. 2021 (%) 2030	2040	2050	Main drivers for 2030 reduction	Main drivers for 2040 reduction
Industry	xxx	xxx	xxx	Full electrification of low and medium temperature industrial processes and chemicals production	...
Power	3%	64%	100%	23% of solar and 4% wind power supply gradually taking over CCGT	77% of power supplied by RES, with low-utilization gas and nuclear build-out underway
Oil &Gas	...	...	...	...	...
Buildings	...	...	...	...	...
Transport	5%	39%	100%	First wave of electrification starting from passenger cars	Further electrification across all segments with FCEV for long-distance trucks and buses
LULUCF	...	...	...	...	...

Source: McKinsey Decarbonization Scenario Explorer

Energy system costs

6. A net-zero pathway will require front-loaded Capex, resulting in Opex savings

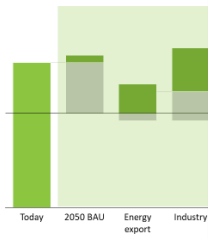


Reduced operating costs would offset ~xx% of the capital investments by 2050. As a result, €xxx billion of the €yyy billion in additional investment would be recovered. Opex savings are mainly driven by savings in power, buildings and transport.

Economic impact

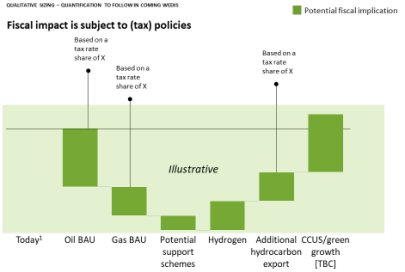
7. economic impact: the balanced pathway result in revenue losses as well as (new) value pools

Revenues



7. Fiscal: the orderly transition pathway includes emerging sectors that (partially) offset declining revenue from legacy industries [TBC]

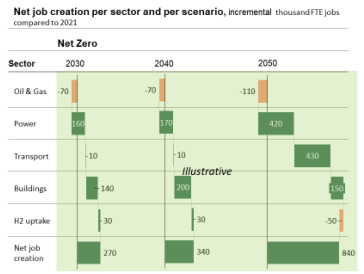
Focused on key value chains



2050	
Net fiscal impact	$X bn
Public revenues	$X bn
Public expenditure	$X bn

Social implication

The Net Zero scenario is expected to generate X k net jobs by 2050



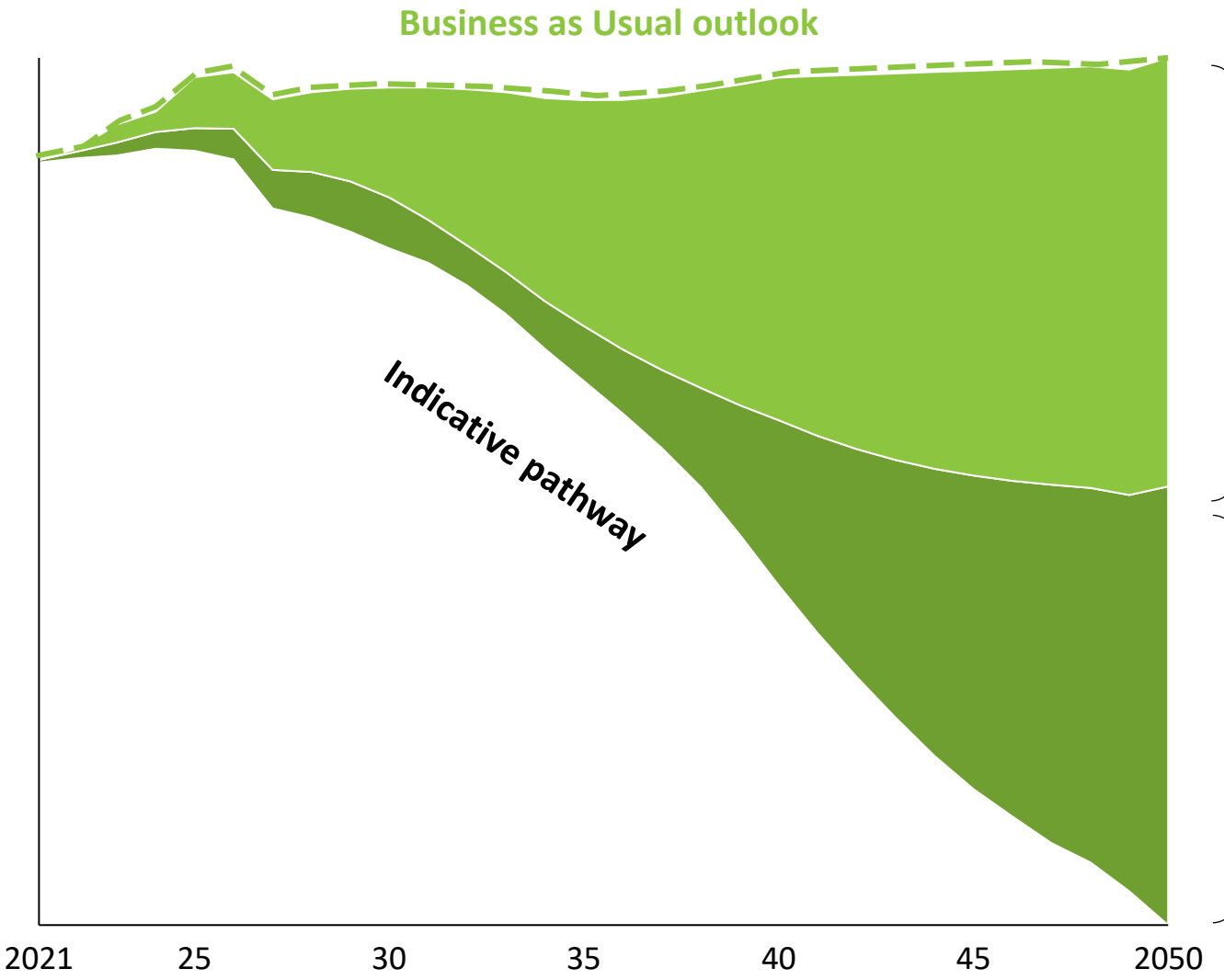
2050	
Jobs²	XXX,000
Direct	XXX,000
Indirect	XXX,000
Induced	XXX,000

Started (expected phase II) | 1st output | Finalized

Source: Carbon Management Lab

A potential pathway

An orderly transition focuses on priority levers, followed by system choices on hard-to-abate segments



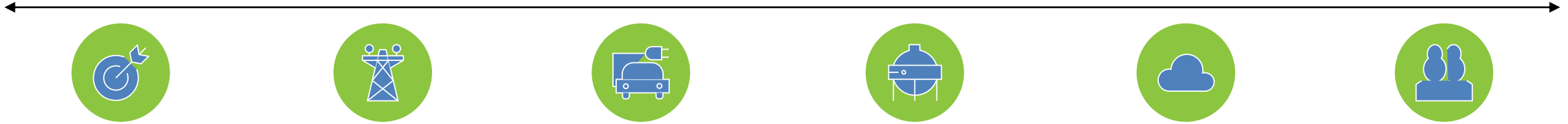
Priority abatement options remain robust across the five objectives. Priority levers do not necessarily mean easy, just that we "know" that it must be done, e.g. Deploying solar PV at a large scale, increasing the adoption of electric vehicles

System choices require analyzing more complex trade-offs on the objectives e.g., electricity vs. hydrogen in heavy transportation

Source: Carbon Management Lab

Six main decarbonization technologies

Majority of abatement



1. Efficient production and energy consumption
2. Electrification & renewables
3. Battery electric technologies
4. Sustainable hydrogen
5. Carbon capture and storage
6. Nature-based solutions

Source: Carbon Management Lab

Oman Sustainability Center

- Ensuring the implementation of the net zero national plan in line with the follow-up methodology to achieve the objectives of Oman Vision 2040
- Follow up the implementation of initiatives and projects, and resolve their challenges.
- Facilitate obtaining the required support from decision makers to achieve the set goals in a timely manner.

Source: Carbon Management Lab

A think tank, Advisory and Follow-up support Center

Ensuring the implementation of the national net zero plan

- Suggest strategies, policies and regulations
- Providing technical and advisory services
- Monitor progress in reducing GHG emissions
- Collecting, analyzing and disseminating information and data
- Developing the available opportunities and activating the implementation plans
- Follow up on any international or local changes to net zero programmes

Center for Technological Advancement, Innovation and Scientific Research

Coordinating local efforts with global expertise and best practices

- Recommending the financing support of research and development activities
- Enhancing and accelerating scientific research and innovation
- Support the initiation of demonstration projects for energy transition technologies

Business Environment Center

Improving the business environment by supporting in ways of financing and investment

- Supporting the development of sustainable finance and circular economy programs
- Ensuring infrastructure readiness for investment
- Support in setting specifications and standards

Netzero Socioeconomic Center

Balance between environmental, economic and social requirements

- Implementation of various awareness and educational programs to raise rationalize energy consumption and contribute to sustainability.
- Enhance capacity building and training
- Enhance local content.

Source: Carbon Management Lab

Thanks