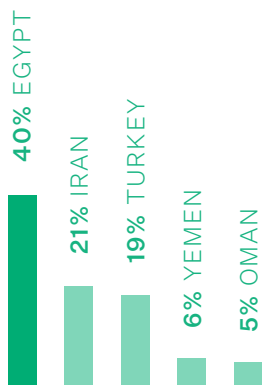


OPPORTUNITY #5

CAN WE SAVE OCEAN ECOSYSTEMS AND HABITATS?

INTERNATIONAL SPACE STATIONS – FOR THE SEA

An independent supranational body enforcing the protection and restoration of ocean ecosystems in international waters, preserving aquatic ecosystems with associated economic benefits and aiding in innovation.



In the Middle East, **Egypt is the biggest producer** of capture fisheries and aquaculture.

WHY IT MATTERS TODAY

Nearly three-quarters of the earth's surface is covered by water and 94% of the earth's living species exist in the oceans.³⁷ Much remains to be learned about Earth's vast oceans, over 80% of which are yet to be explored,³⁸ and more research is needed, especially in climate change adaptation strategies and the sustainable development of coastal communities.

A total of 167 countries and the European Union are parties to the United Nations Convention on the Law of the Sea (UNCLOS), which came into force in 1994, setting the limit of various areas and laying the foundation for the multilateral governance of the oceans.³⁹ Meanwhile, issues such as algal blooms, microplastics and the overfishing of favourite species such as cod, tuna and salmon pose threats to our aquatic ecosystems.

People of the Arabian Gulf are related economically, culturally and socially to the sea. These ecosystems provide important goods and services and are rich in varieties of fish, which represent a major source of food for people in the region.⁴⁰ Other ecosystem benefits range from primary energy production and nutrient cycling to erosion and sedimentation control.⁴¹

SECTORS



When it comes to the Middle East, and at risk, the total production of fresh seafood in the region amounts to around 2% of the total worldwide⁴² and, since 1961, fish production has been growing at an annual rate of 16%.⁴³ Egypt is the biggest producer in both capture fisheries and aquaculture, supplying 40% of total production in the Middle East. This is followed by Iran (21%), Turkey (19%), Yemen (6%) and Oman (5%). Kuwait, Qatar, Syria, Lebanon and Jordan are the lowest producers.⁴⁴

THE OPPORTUNITY TOMORROW

A future issue-based supranational partnership could see an international agreement between nations. Such an agreement may, for example, establish a sea station focused on marine life in a specific area as a platform for scientists who specialise in marine biology, hydrology, geology and chemistry, as well as experts on climate change adaptation and sustainable development in coastal communities. A partnership of this kind could provide opportunities for technological spin-offs with significant positive socio-economic impacts.

BENEFITS

Restoring oceans mitigates the effects of climate change, such as warming and acidity. Furthering international collaboration enables novel commercial use of the seas – such as rare mineral mining, aquatic farming and deep-sea transport – to be approached sustainably and in ways that benefit all.

RISKS

There remains a risk that, if political willingness to collaborate weakens, the new body will lack the effective authority to enforce its decisions.



OPPORTUNITY #6

WHAT IF ENERGY WAS LIMITLESS?

ENERGY WITHOUT END

Daily life transformed by
a limitless supply of energy
through nuclear fusion

WHY IT MATTERS TODAY

Global energy consumption has risen by around 60% since 1990 with associated carbon dioxide emissions doubling since then.⁴⁵

Around 37% of power generation was from coal followed by 23% from gas and around 3% from oil. The total share of power generation from combustible fuels in 2019 was 63%.⁴⁶

The share of low carbon sources (wind, solar, nuclear, hydro) in power generation has been steadily increasing to stand at 32.2% of global supply in 2019.⁴⁷

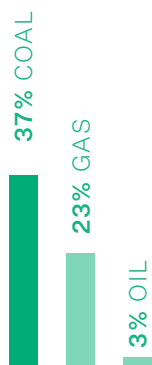
Even though the price of renewable technologies remains high for some countries, costs have been falling⁴⁸ by an estimated 13% for onshore wind projects, 9% for offshore wind projects and 7% for solar photovoltaics (PV).⁴⁹ The cost of large-scale solar projects has decreased by 85% in the last decade.⁵⁰

Closing all coal power plants would cut emissions by around 3 billion tonnes of CO₂ a year.⁵¹ This represents around one-fifth of the reduction in emissions needed to halve emissions by 2030 compared with 2010 as required to limit the temperature rise to 1.5°C.⁵² It would also reduce costs of energy by an estimated \$32.3 billion per year.⁵³ It is projected that emerging and developing economies will need to increase investments in clean energy by more than 7 times to \$1 trillion by 2030 to reach the global goal of net-zero emissions by 2050.⁵⁴

The lower cost of renewables provide a strong business case to move past coal while pursuing net zero emissions.⁵⁵

SECTORS

AGRICULTURE & FOOD • ADVANCED MATERIALS & BIOTECHNOLOGY • AUTOMOTIVE, AEROSPACE & AVIATION • CHEMICALS & PETROCHEMICALS • EDUCATION • ENERGY, OIL & GAS • HEALTH & HEALTHCARE • INFORMATION & COMMUNICATION TECHNOLOGY • INFRASTRUCTURE & CONSTRUCTION • LOGISTICS, SHIPPING & FREIGHT • MANUFACTURING • MEDIA & ENTERTAINMENT • METALS & MINING • REAL ESTATE • TRAVEL & TOURISM • UTILITIES



The total share of power generation from combustible fuels

Closing all coal power plants would cut emissions by around

3 billion tonnes
of CO₂ a year

one-fifth of the reduction in emissions needed to halve emissions by 2030

THE OPPORTUNITY TOMORROW

Nuclear fusion has the potential to accelerate the energy transition beyond the changes made possible by renewables by providing a source of energy that is emissions-free, cheap, safe and almost limitless. Fusion reactors require no hazardous materials such as uranium or plutonium and produce no greenhouse gases. Their fuel, seawater, is readily available. Fusion can potentially provide energy independence for numerous countries and decarbonise energy use.

Research and demonstration projects are developing rapidly, such as the ITER device, supported by 35 countries.⁵⁶ As many as 74 experimental fusion reactors are currently operating, with 15 more proposed or planned.⁵⁷

Potential advances include floating⁵⁸ low-temperature reactors that can extract hydrogen isotopes from seawater while burying low-level radioactive waste deep in the seabed. In combination with ultra-low latency energy transmission through high temperature superconductors, this near infinite form of clean energy could become available very widely.

BENEFITS

Limitless power enables the growth of new industries. Travel and logistics can become both cheaper and less environmentally damaging, as can electricity, heating and cooling. People can live more comfortably, efficiently and productively, increasing their quality of life.

RISKS

Risks include accidental or deliberate incidents with the handling of radioactive waste from fusion, even though it has a short half-life.