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News: Global Offshore Wind Alliance (GOWA)

- Recently, nine new countries sign up for Global Offshore Wind Alliance at COP27
- New countries to join the collaboration are Belgium, Colombia, Germany, Ireland, Japan, the Netherlands, Norway, the UK, and the US.

Global Offshore Wind Alliance (GOWA)

- Global Offshore Wind Alliance (GOWA) was established to ramp up of offshore wind in order to tackle the climate and energy security crisis.
- It was set up by the International Renewable Energy Agency (IRENA), Denmark and the Global Wind Energy Council (GWEC).
- GWEC was established in 2005 to provide a credible and representative forum for the entire wind energy sector at an international level.
- Several organizations are supporting the alliance and promoting offshore wind in their respective regions.
- Both IRENA and the International Energy Agency (IEA) expect that offshore wind capacity will need to exceed 2000 GW in 2050, from just over 60 GW

today, to limit the rise in global temperatures to 1.5 degree Celsius and achieve net zero.

- To reach this target, GOWA will aim to contribute to accelerating growth to reach a total of at least 380 GW installed capacity by the end of 2030.
- As of 2022, the alliance has several organizations as members, being the Asia Wind Energy Association, Business Network for Offshore Wind, Energy Industries Council, Pacific Ocean Energy Trust and World Forum for Offshore Wind.

International Renewable Energy Agency (IRENA)

- International Renewable Energy Agency is an intergovernmental organisation; it was officially founded in Bonn, Germany, in January 2009.
- Currently it has 164 members; India is the 77th Founding Member of IRENA.
- It has its headquarters in Abu Dhabi, United Arab Emirates.
- The World Bank– Energy Sector Management Assistance Program (WB-ESMAP), in partnership with, Agence Française de Développement (AFD), International Renewable Energy Agency (IRENA) and International Solar Alliance (ISA) developed the Solar Risk Mitigation Initiative (SRMI or "the Initiative") was established recently.

- Recently, The International Renewable Energy Agency (IRENA) estimated that the global photovoltaic waste will touch 78 million tonnes by 2050, with India expected to be one of the top five generators of such waste. India currently considers solar waste a part of electronic waste and does not account for it separately.

Major Functions

- It supports countries in their transition to a sustainable energy future, and serves as the principal platform for international cooperation, a centre of excellence, and a repository of policy, technology, resource and financial knowledge on renewable energy.
- It promotes the widespread adoption and sustainable use of all forms of renewable energy, including bioenergy, geothermal, hydropower, ocean, solar and wind energy in the pursuit of sustainable development, energy access, energy security and low-carbon economic growth and prosperity.
- Recently, the International Renewable Energy Agency (IRENA) released the 'Renewable Power Generation Costs in 2020' report.
- Energy Progress Report 2020 was jointly published by IRENA (as this year Chairperson), International Energy Agency, United Nations Statistics Division, the World Bank and WHO.

- World Energy Transitions Outlook Report was recently released by IRENA.

International Energy Agency (IEA)

- International Energy Agency is an autonomous organisation that works to ensure reliable, affordable and clean energy.
- Headquartered in Paris, the agency was established in 1974 in the wake of Oil crisis of 1973 by Organisation of Economic Development (OECD) Countries.
- The framework was anchored in the IEA treaty called the "Agreement on an International Energy Program".
- IEA publishes World Energy Outlook Report annually.
- 30 nations are presently members to IEA, while India is an associate to IEA.
- The membership is confined to OECD countries (37 in total) and these members are required to maintain a stock levels equivalent to at least 90 days of previous years' net imports.
- The Governing Board is the main decision- making body of the IEA, composed of energy ministers or their senior representatives from each member country.
- The IEA does not dispense grants or make loans.
- IEA focuses on the "3Es" of effectual energy policy: (i) Energy security, (ii) Economic development and (iii) Environmental protection.

- Recently, NITI Aayog and International Energy Agency (IEA) jointly released a report on 'Renewables Integration in India 2021' (24-07-2021).
- Ocean Energy Systems (OES) works under IEA.
- Recently the International Energy Agency (IEA) has slammed India's natural gas pricing policy, saying linking domestic production to very low global reference prices has reduced incentives for producers to raise supplies. Currently, the price of domestically produced natural gas is fixed by a formula that averages out rates in gas surplus nations such as Russia and the US.

Framework for Strategic Partnership

- The Framework for Strategic Partnership between the International Energy Agency (IEA) members and the Government of India was signed in January, 2021 to strengthen mutual trust and cooperation & enhance global energy security, stability and sustainability.
- This partnership will lead to an extensive exchange of knowledge and would be a stepping stone towards India becoming a full member of the IEA.
- The contents of the Strategic partnership will be jointly decided by the IEA Members and India, including a phased increase in benefits and responsibilities for India as an IEA Strategic partner, and building on existing areas of work within the Association and the Clean Energy Transitions Programme (CETP),

such as Energy Security, Clean & Sustainable Energy, Energy Efficiency, Enhancing petroleum storage capacity in India, Expansion of gas-based economy in India etc.

- The IEA Secretariat will be responsible for the implementation of the cooperative activities in India and for facilitating discussion between the IEA Members and India to further develop the Strategic Partnership.
- The Government of India endeavours to take the necessary steps to encourage and promote strategic and technical co-operation in the energy sector in the identified areas noted above, through the Framework Agreement.

Offshore Wind Energy

- Wind energy today typically comes in two different "types": onshore wind farms which are large installations of wind turbines located on land, and offshore wind farms which are installations located in bodies of water.
- Offshore wind energy refers to the deployment of wind farms inside the water bodies. They utilize the sea winds to generate electricity. These wind farms either use fixed-foundation turbines or floating wind turbines.

- A fixed-foundation turbine is built in shallow water, whereas a floating wind turbine is built in deeper waters where its foundation is anchored in the seabed. Floating wind farms are still in their infancy.
- Offshore wind farms must be at least 200 nautical miles from the shore and 50 feet deep in the ocean.
- Offshore wind turbines produce electricity which is returned to shore through cables buried in the ocean floor.

Status of Wind Energy in India

- India's electricity generation from wind reached 39.2 gigawatts (GW) a year in March 2021. An addition of another 20 GW over the next five years is expected to happen soon.
- The compound annual growth rate for wind generation has been 11.39% between 2010 and 2020, and for installed capacity, it has been 8.78%.
- More than 95% of commercially exploitable resources are located in seven states: Andhra Pradesh, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan and Tamil Nadu.

Policies related to Wind Energy

- **National Wind-Solar Hybrid Policy**: The main objective of the National Wind-Solar Hybrid Policy, 2018 is to provide a framework for promotion of large grid connected wind-solar PV hybrid systems for optimal and efficient utilization of wind and solar resources, transmission infrastructure and land.
- **National Offshore Wind Energy Policy**: The National Offshore wind energy policy was notified in October 2015 with an objective to develop the offshore wind energy in the Indian Exclusive Economic Zone (EEZ) along the Indian coastline of 7600 km.

Benefits of Offshore Wind Energy

- Wind speed over water bodies is high and is consistent in direction. As a result, offshore wind farms generate more electricity per installed capacity.
- Fewer offshore turbines are required to produce the same capacity of energy as compared to onshore ones.
- Offshore wind farms have a higher CUF (capacity utilisation factor) than onshore wind farms. Therefore, offshore wind power allows for longer operating hours.
- A wind turbine CUF is equal to the average output power divided by the maximum power capabilities.

- It's possible to build bigger and taller offshore windmills, resulting in increased energy harvest.
- Furthermore, the wind flow is not restricted by hills or buildings.

News: Red Crowned Roofed Turtle

- Recently, India has proposed to protect the Red-Crowned Roofed turtle at the 19th Conference of the Parties to CITES (Convention on International Trade in Endangered Species) in Panama. India has appealed to increase the protection status by converting the turtle from Appendix II to Appendix I.

Red Crowned Roofed Turtle

- Red Crowned Roofed Turtle is one of the 24 species endemic to India, is characterised by the bright colours such as red, yellow, white and blue on the faces and necks of the males.
- It is also called as Bengal roof turtle and Red-crowned roofed turtle.
- Red Crowned Roofed Turtle is a freshwater turtle species found in deep flowing rivers with terrestrial nesting sites.
- It is native to India, Bangladesh and Nepal.
- Historically, the species was widespread in the Ganga River, both in India and Bangladesh. It also occurs in the Brahmaputra basin.

- Currently in India, the National Chambal River Gharial Sanctuary is the only area with substantial population of the species, but even this Protected Area and habitat are under threat.

Threats faced by Red crowned roofed turtles

- Loss or degradation of habitat due to pollution and large scale development activities like water extraction for human consumption and irrigation and irregular flow from the upstream dams and reservoirs are the major threats faced by the species.
- Sand mining and growing of seasonal crops along Ganga River are majorly affecting the sandbars along the river that are used by the species for nesting.
- Drowning by illegal fishing nets.
- Poaching and illegal trade.

Conservation status

- The International Union for Conservation of Nature (IUCN) has enlisted Red Crowned Roofed Turtle as Critically Endangered.
- It is also protected in Schedule I of Wildlife Protection Act of 1972.
- The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) has enlisted the turtle in Appendix II.

- A list of animals including Red Crowned Roofed Turtle are included in the 'list of priority species to be secured' under the National Mission for Clean Ganga (NMCG).

Convention on International Trade in Endangered species of Wild flora and fauna (CITES)

- CITES Convention, also known as Washington Convention, is a result of a resolution adopted in 1963 at a meeting of members of the International Union for Conservation of Nature (IUCN).
- It is administered by United Nations Environment Programme (UNEP).
- Headquarters of CITES is located in Geneva, Switzerland.
- CITES is in force since 1st July 1975 when 10 countries ratified the agreement.
- Aim of the convention is to control or prevent international commercial trade in endangered species or products derived from them.
- India became a party to the convention in 1976.
- Although CITES is legally binding on state parties to the convention it is not self-executing. Parties are obliged to adopt their own domestic legislation to implement its goals.

- Secretariat of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) along with World Customs Organisation; United Nations Office on Drugs and Crime (UNODC); Interpol; and World Bank form the International Consortium on Combating Wildlife Crime (ICCWC).
- It classifies plants and animals according to three categories, or appendices, based on how threatened. They are:

Appendix I species

- Appendix I list species that are in danger of extinction. It prohibits commercial trade of these plants and animals except in extraordinary situations for scientific or educational reasons.

Appendix II species

- They are those that are not threatened with extinction but that might suffer a serious decline in number if the trade is not restricted. Their trade is regulated by permit.

Appendix III species

- They are protected in at least one country that is a CITES member state and that has petitioned others for help in controlling international trade in that species.
- Conference of Parties (CoP) to CITES is done once in every 3 years.