To receive Daily news juice pdf on your WhatsApp, send name and city through WhatsApp on 75979-00000.

1. Green, Grey and Blue Hydrogen

Why in News?

The Ministry of New and Renewable Energy (MNRE) has announced a Rs-496-crore (until 2025-26) scheme to support pilot projects that either test the viability of green hydrogen as a vehicle fuel or develop secure supporting infrastructure such as refuelling stations. Hydrogen is expected to be used widely in the transportation sector in the coming years.

Green and grey hydrogen

Hydrogen is colourless, and green hydrogen is 'green' only by virtue of the way it is produced, and the source of the energy used to manufacture it. Green hydrogen refers to hydrogen that is produced from the electrolysis of water — splitting it into hydrogen and oxygen — using an electrolyser powered by renewable energy. This is considered to be a virtually emission-free pathway for hydrogen production — it is 'end-to-end' green because it is powered by green energy, uses water as feedstock, and emits no carbon on consumption.

Currently, most hydrogen produced for industrial consumption and applications is 'grey' hydrogen, which is produced from natural gas through energy-intensive processes, and has high carbon emissions. Except for a difference in the production pathway and emissions, green hydrogen is essentially the same as grey — or hydrogen categorised by any other colour.

THE COLOURS OF HYDROGEN

GREY hydrogen constitutes the bulk of India's production currently. It is extracted from hydrocarbons (fossil fuels and natural gas), and carbon dioxide is the byproduct of consumption.

BLUE hydrogen is also sourced from fossil fuels, but byproducts such as carbon monoxide and carbon dioxide are captured and stored, so it is better than grey hydrogen.

GREEN HYDROGEN is an 'end-to-end' green fuel. Electricity generated from renewable sources such as wind or solar is used to electrolyse water. Byproducts are water or water vapour.

The many colours of Hydrogen.

Relevance: GS Prelims & Mains Paper III; Environment
Source: Indian Express

2. NATO at 75

Why in News?
Secretary General Jens Stoltenberg said "NATO is bigger, stronger, and more united than ever." With 32 member-states – the most it has ever had – that may be true in one regard. However, the grouping also faces significant challenges. Its expansion is believed to be a key factor behind Russia's 2022 invasion of Ukraine and the continued conflict.

Why was NATO established?
NATO is a Western security alliance founded on April 4, 1949, with 12 founding members – Belgium, Canada, Denmark, France, Iceland, Italy, Luxembourg, the Netherlands, Norway, Portugal, the United Kingdom and the United States.

They signed the Washington Treaty, which gets its power from Article 51 of the United Nations Charter, "which reaffirms the inherent right of independent states to individual or collective defence."

At the very heart of the alliance is the concept of "collective security" – an attack on any of the members is seen as an attack on all of them and demands collective action. This was deemed necessary in 1949 amid the Cold War rivalry between the then USSR and the US, over ideological and economic superiority.

Article 5 of the Washington Treaty, on collective security, was added "to counter the risk that the Soviet Union would seek to extend its control of Eastern Europe to other parts of the continent." The USSR also aimed to shore up allies and in 1955, the Warsaw Pact was constituted as an alliance of socialist countries.

However, it doesn't necessitate direct military intervention constituting all members. The scale of action is dependent on each member country "as it deems necessary". The only time the article has been invoked so far was following the September 11, 2001 attacks on the US. NATO forces were sent to Afghanistan and deployed for nearly 20 years.

Who are NATO's members today?
Apart from the original 12, members include Greece and Turkey (1952); West Germany (1955; later as Germany); Spain (1982); the Czech Republic, Hungary, and Poland (1999); Bulgaria, Estonia, Latvia, Lithuania, Romania, Slovakia, and Slovenia (2004); Albania and Croatia (2009); Montenegro (2017); North Macedonia (2020); Finland (2023); and Sweden (2024).

There was a wave of new entrants in 1999, a few years after the Soviet Union disintegrated in 1991. Concerns were raised then about the alliance possibly becoming obsolete, given its original purpose of establishment no longer existed.

Why NATO is still surviving?
US political science professor John S Duffield, who wrote on 'NATO's Functions after the Cold War' (published in the Political Science Quarterly journal in the mid-1990s) argued there were three reasons why NATO survived.
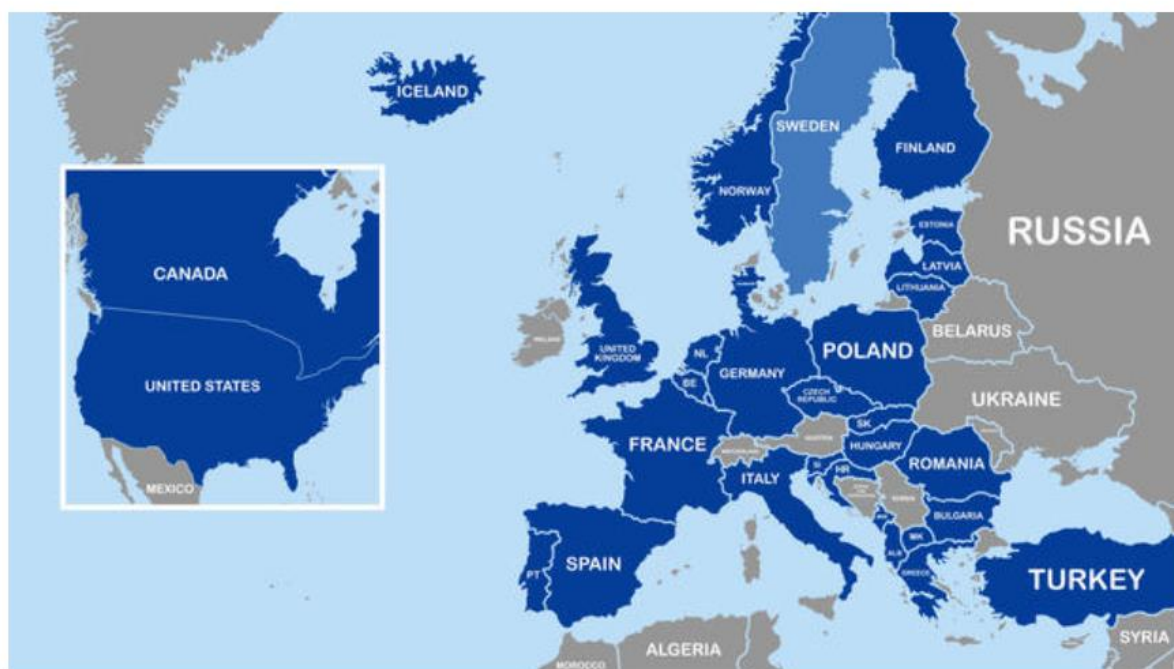
First, he said "NATO still serves to secure its members against a number of actual or potential dangers emanating from outside their territory," meaning even beyond Russia. Today, China

has emerged as a power which NATO countries often compete with not just in economic terms, but also in the form of various ideological and strategic differences.

Second, he credits "NATO's capacity for institutional adaptation", and how it has played a role in "containing and controlling militarised conflicts in Central and Eastern Europe" by "actively promoting stability within the former Soviet bloc."

Above all, he wrote, "NATO pessimists overlooked the valuable intra-alliance functions that the alliance has always performed and that remain relevant after the cold war. Most importantly, NATO has helped stabilize Western Europe, whose states had often been bitter rivals in the past."

Map of NATO countries

NATO has 31 member countries, highlighted in dark blue, and is expected to have Sweden, in light blue, join the alliance.

3. India's Position on UNHRC Resolution Regarding Gaza Ceasefire

Why in News?
India recently made a notable decision regarding a resolution at the United Nations Human Rights Council (UNHRC) concerning the conflict in Gaza.

India's Abstention
India chose to abstain from voting on a resolution calling for an immediate ceasefire in Gaza and the implementation of an arms embargo on Israel. This resolution was adopted by the 47-member Council.

Reasoning Behind Abstention
• India's decision to abstain aligns with its previous stance on HRC resolutions focusing on "accountability."
• While India refrained from supporting this specific resolution, it did vote in favor of three other resolutions criticizing Israel for human rights violations against Palestinians, addressing Israel's occupation of Syrian Golan, and advocating for Palestinian self-determination.

Resolution Details
• All four resolutions were introduced by Pakistan on behalf of the Organisation for Islamic Cooperation.
• The abstention from voting was in line with India's previous actions on similar resolutions and its vote at the UNGA in October 2023.
• The HRC resolution failed to condemn Hamas while condemning Israel's actions, including the killing of Palestinians, blockade of food supplies, and civilian displacement in Gaza.

International Response
• The resolution faced opposition from the U.S., Germany, and four other countries.
• India was among 13 countries that abstained, alongside France and Japan, while 28 members voted in favor, including Bangladesh, China, Maldives, the UAE, and Indonesia.

India's Supportive Votes
• India supported three other resolutions concerning the rights of the Palestinian people to self-determination, human rights in the occupied Syrian Golan, and Israeli settlements in occupied territories.

Ministry of External Affairs' Stance
The Ministry of External Affairs did not provide an official explanation for India's abstention from the vote. However, the decision is believed to be consistent with past actions and reflects India's nuanced approach to the complex situation in the Middle East.

About UNHRC
The United Nations Human Rights Council (UNHRC) is a United Nations body whose mission is to promote and protect human rights around the world. The Council has 47 members elected for staggered three-year terms on a regional group basis. The headquarters of the Council are at the United Nations Office at Geneva in Switzerland.