



DATE: 9 JULY 2026

1 Coal Gasification (Source: PIB)

Coal gasification is a process that transforms Coal into a Synthetic gas (Syngas), consisting of mixture of gasses such as Carbon monoxide (CO), Hydrogen (H₂), Carbon dioxide (CO₂), Methane (CH₄) and Water vapor (H₂O).

- Syngas can be used to produce a wide range of Fertilizers, Fuels, solvents and synthetic materials.

Process

- **Preparation:** Coal is crushed into a fine powder to increase its surface area and enhance the chemical reactions during the process.
- **Gasification Reactor:** The crushed coal is introduced into a high-temperature and high-pressure reactor along with limited oxygen or air and steam.
- **Chemical Reactions:** In the absence of sufficient oxygen for complete combustion, the coal undergoes a series of complex chemical reactions.
- **Gas Cleaning:** The raw syngas produced from the reactor contains impurities like tar, sulfur, and dust. These impurities need to be removed through a gas cleaning process before the syngas can be used further.

Advantages

- Gasification boosts efficiency to 50%+ in integrated gasification combined cycle (IGCC) plants versus 30–40% in traditional coal plants, via gas turbine plus steam recovery.
- It cuts local pollutants (sulfur, particulates) through pre-use cleaning and enables >90% CO₂ capture potential.
- Applications include power, hydrogen, liquids (CTL), and chemicals, reducing oil import reliance.

2 Association of Southeast Asian Nations (ASEAN) (Source: PIB)



ASSOCIATION OF SOUTHEAST ASIAN NATIONS (ASEAN)

One Vision, One Identity, One Community

ABOUT ASEAN

- ASEAN is a regional intergovernmental organization of Southeast Asian countries.
- Established on **8 August 1967** through the Bangkok Declaration (Bangkok, Thailand).
- Aims to promote regional peace, stability, economic growth, and socio-cultural development.
- ASEAN Secretariat is based in Jakarta, Indonesia.

MEMBER STATES (11)

Brunei Darussalam

Cambodia

Indonesia

Lao PDR

Malaysia

Myanmar

Philippines

Singapore

Thailand

Viet Nam

East Timor (Timor-Leste)

East Timor was officially admitted as the 11th member on 10 May 2025.

OBJECTIVES

- To accelerate economic growth, social progress and cultural development.
- To promote regional peace and stability.
- To promote active collaboration and mutual assistance.
- To provide assistance in education, research and training.
- To enhance cooperation with external partners and international organizations.

ASEAN MAP



PILLARS OF ASEAN COMMUNITY

- ASEAN POLITICAL-SECURITY COMMUNITY (APSC)**
Promotes peace, stability, democracy, human rights and the rule of law.
- ASEAN ECONOMIC COMMUNITY (AEC)**
Aims for a single, integrated market and a highly competitive economic region.
- ASEAN SOCIO-CULTURAL COMMUNITY (ASCC)**
Promotes inclusive and sustainable development and a people-oriented ASEAN.

KEY ACHIEVEMENTS

- Created one of the world's most dynamic regions with a combined GDP of over **US\$ 3.8 trillion** (2023 est.).
- Established ASEAN Free Trade Area (AFTA) – one of the largest FTAs in the world.
- Enhanced connectivity through infrastructure, transport and digital initiatives.
- Promotes cooperation in disaster management, health, environment, and counter-terrorism.

IMPORTANT ASEAN FORUMS

- ASEAN Summit**: Highest decision-making body; held twice a year.
- ASEAN Regional Forum (ARF)**: Promotes political and security dialogue in the Asia-Pacific.
- East Asia Summit (EAS)**: Includes ASEAN countries and major partners (India, China, Japan, USA, Russia, etc.).
- ASEAN Defence Ministers' Meeting (ADMM)**: Enhances defence cooperation and strengthens trust among member states.

ASEAN DIALOGUE PARTNERS

China

Japan

Republic of Korea

India

Australia

New Zealand

United States

Russia

European Union (EU)

Canada

United Kingdom

...and more partners through sectoral dialogue and cooperation.

DID YOU KNOW?

ASEAN is home to over **680 million** people, diverse cultures, languages and traditions, working together towards a peaceful and prosperous Southeast Asia.

FACT BOX

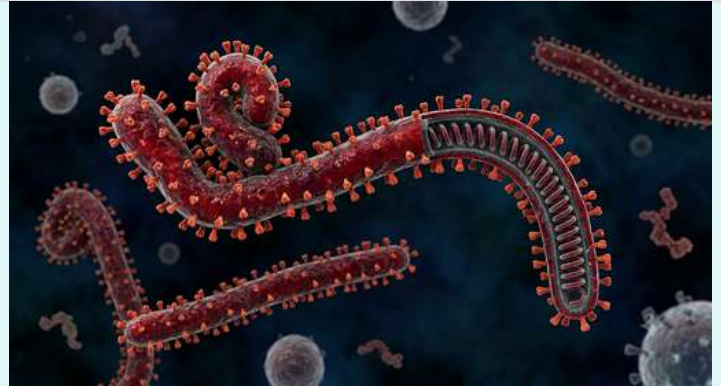
Established	Member States	Population	Combined GDP (2023 est.)
8 August 1967	11	680+ million	US\$ 3.8 trillion+
			Secretariat
			Jakarta, Indonesia



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3 Ebola (Source: The Hindu)

- **Origin of Name:** The virus is named after the Ebola river (Republic of Congo) first outbreak in 1976.
- **Cause:** Ebola virus
- **Symptoms:**
 - **Early:** Fever, headache, muscle pain, sore throat.
 - **Advanced:** Vomiting, diarrhea, rash, organ failure, and internal/external bleeding.
 - **Incubation period:** 2-21 days.
- **Diagnosis:** Blood tests (PCR, ELISA) and differential diagnosis to rule out similar diseases.



- **Treatment:**
 - Supportive care (rehydration, symptom management).
 - Monoclonal antibodies (e.g., Inmazeb, Ebanga) and experimental antivirals.
- **Prevention:**
 - Vaccination with Ervebo.
 - Use of PPE, safe burial practices, and public health awareness.