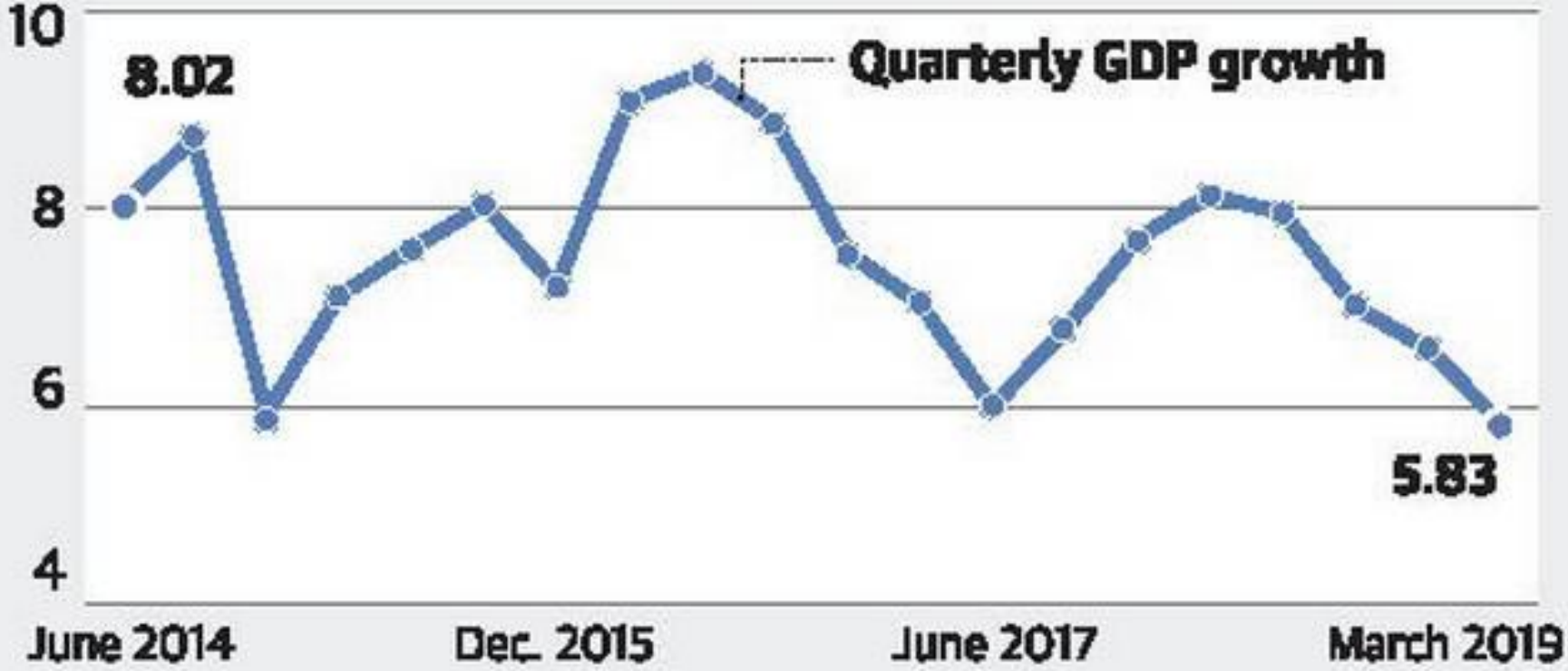
Energy Economy, energy Intensity & energy Security

Energy Economy

- **Gross domestic product** (**GDP**) is a monetary measure of the market value of all the final goods and services produced in a specific time period, often annually.
- GDP (nominal) per capita does not, however, reflect differences in the cost of living and the inflation rates of the countries; therefore using a basis of GDP per capita at purchasing power parity (PPP) is arguably more useful when comparing differences in living standards between nations.
- an aggregate measure of production equal to the sum of the gross values added of all resident and institutional units engaged in production (plus any taxes, and minus any subsidies, on products not included in the value of their outputs)

GDP	▲ $2.972 trillion (nominal; 2019 est.)[3] ▲ $11.468 trillion (PPP; 2019 est.)[3]
GDP rank	7th (nominal; 2018) 3rd (PPP; 2018)
GDP growth	▼ 6.8% (FY 2019)[4] 8.2% (16/17) 7.2% (17/18) 7.2% (18/19e) 7.5% (19/20f)[5]
GDP per capita	▲ $2,199 (nominal; 2019 est.)[3] ▲ $8,484 (PPP; 2019 est.)[3]
GDP per capita rank	142nd (nominal; 2018) 119th (PPP; 2018)
GDP by sector	Agriculture: 15.87% Industry: 29.73% Services: 54.40%

India's quarterly GDP growth slumped to a five-year low of **5.83%** in the last quarter of FY19. The previous low in the last five years was 5.92% in the third quarter of FY15



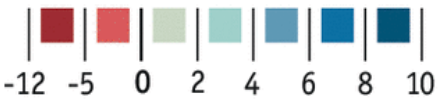
TOP 10 The World's Biggest Economies for 2019 and 2020

www.focus-economics.com

FOCUSECONOMICS

On the rise

GDP forecasts 2018, % change on a year earlier



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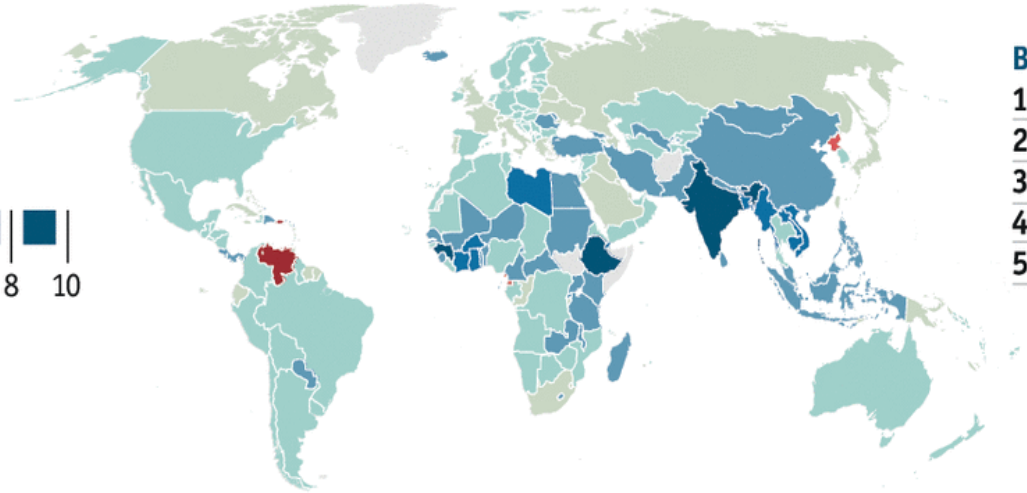
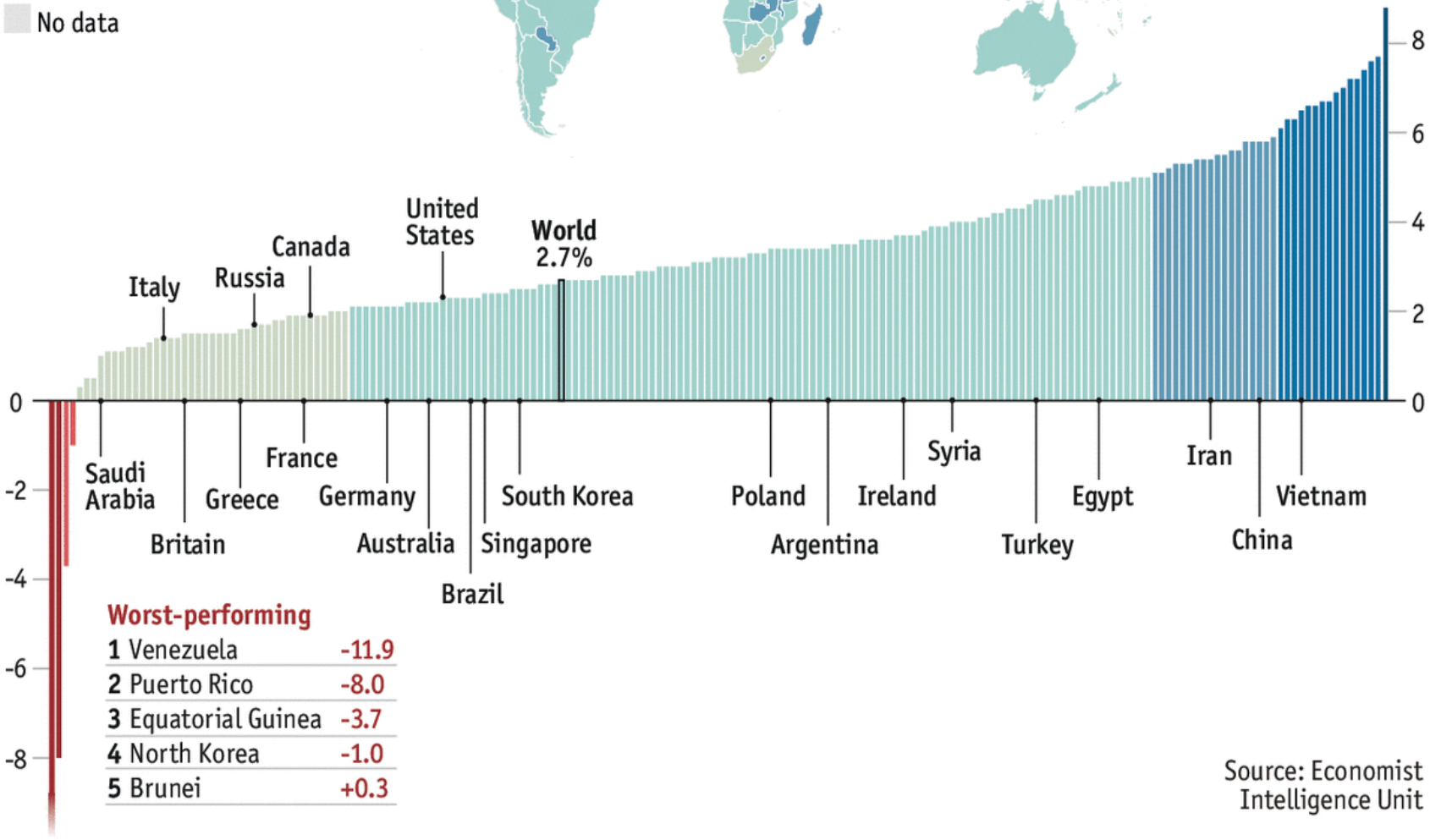


Best-performing

1	Dominica	+8.8
2	India	+7.7
3	Bhutan	+7.6
4	Anguilla	+7.4
5	Ethiopia	+7.2



Worst-performing

1	Venezuela	-11.9
2	Puerto Rico	-8.0
3	Equatorial Guinea	-3.7
4	North Korea	-1.0
5	Brunei	+0.3

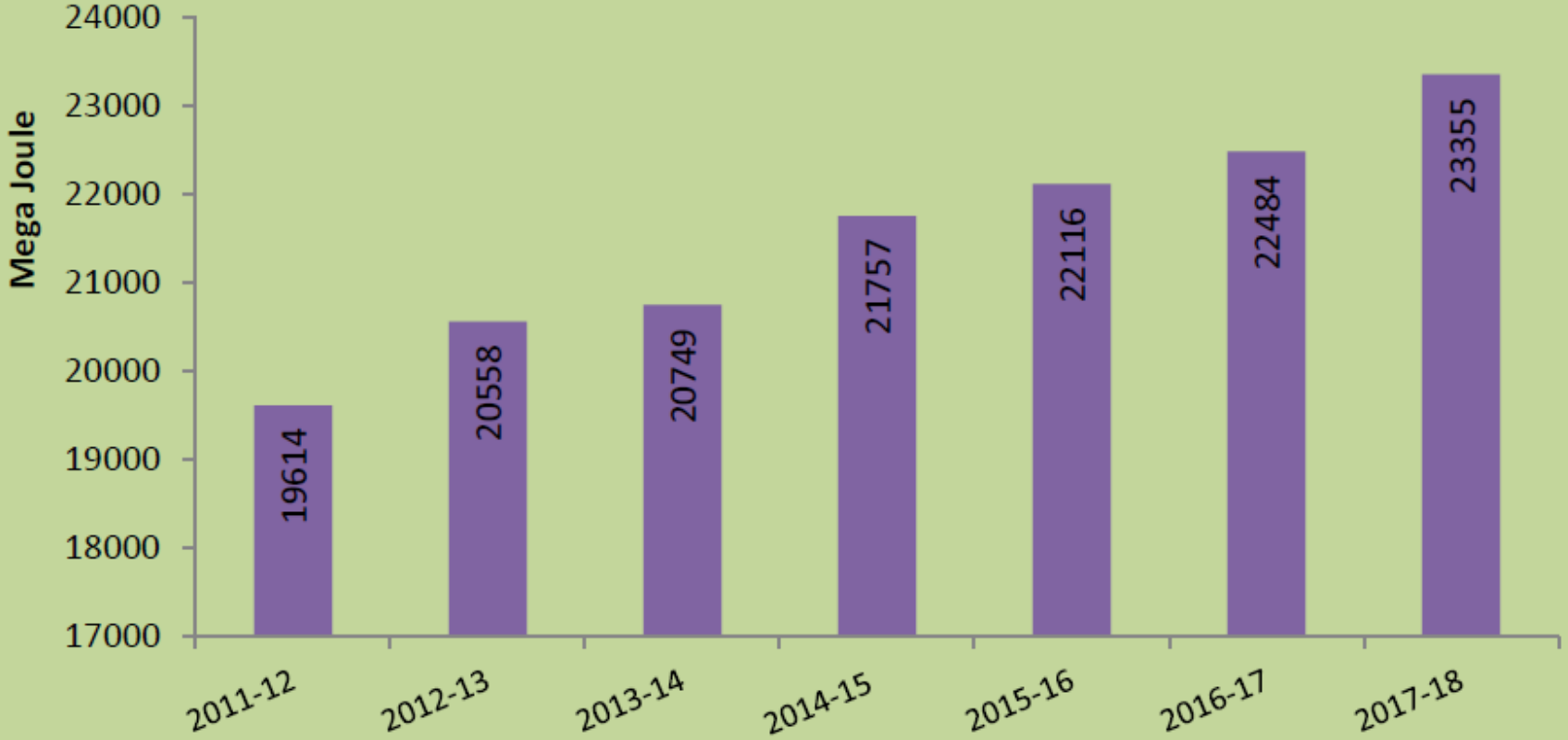
Source: Economist Intelligence Unit

Economist.com

Per Capita energy Consumption

- The Total energy consumption divided by total population at the same time.
- 606 Kwh per year at the end of 2004-05
- Very low compare to developed countries like USA, UK. Just 4% of USA and 20% of the world average.
- Per-capita Energy Consumption (PEC) increased from 19,599 Megajoules in 2011-12 to 23,355 Megajoules in 2017-18, The annual increase in PEC for 2017-18 over 2016-17 was 3.87%

Fig 6.6 :Per Capita Energy Consumption from 2011-12 to 2017-18



- Energy Intensity is defined as the amount of energy consumed for generating one unit of Gross Domestic Product (at constant prices).

Energy intensity

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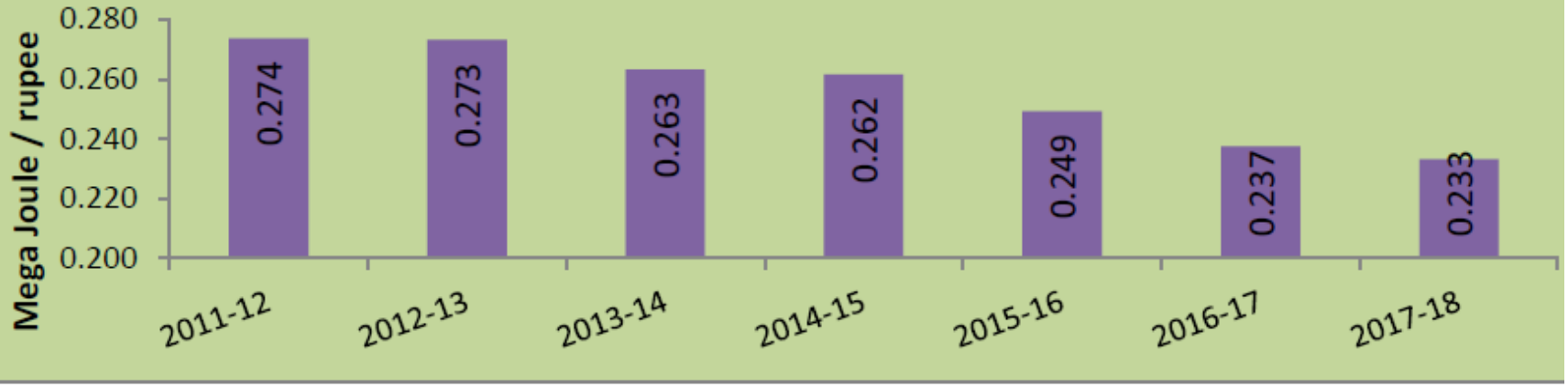
OR

- Energy Consumption per unit GDP.
- Indicates net energy consumption to produce the product
- If Figure is higher, higher energy consumed behind production, steps for reduce the energy intensity.
- India’s energy intensity is 3.7 times of Japan, 1.55 times of USA, 1.47 Times of Asia and 1.5 times of world Average.

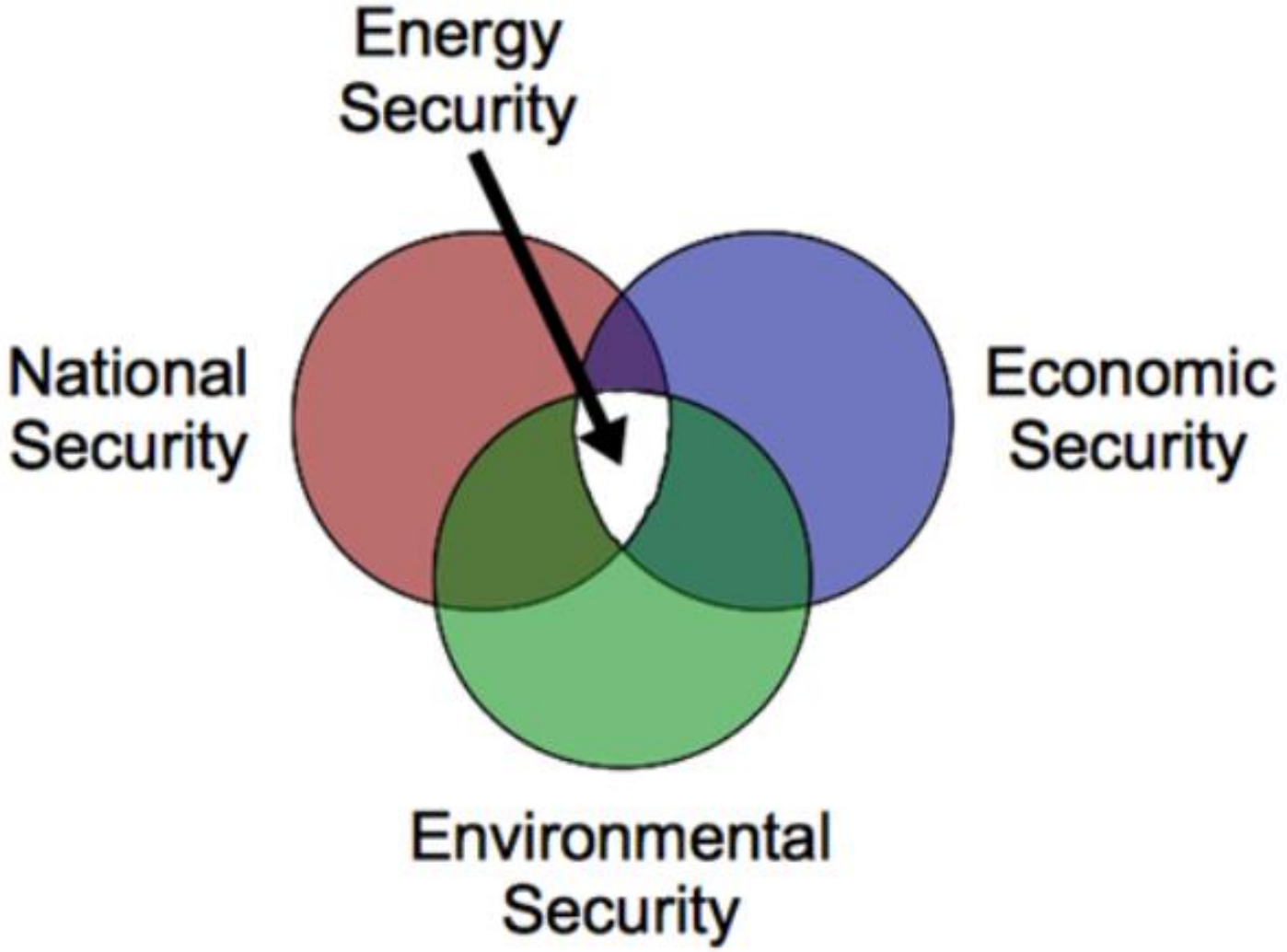
Fig 6.7: Trends in Energy Intensity from 2011-12 to 2017-18



- The Energy Intensity (at 2011-12 prices) decreased from 0.274 Megajoules per rupee in 2011-12 to 0.233 Mega Joules in 2017-18 (Table 6.3).

- Energy intensity has decreased over the last decade. This decline may be attributed to faster growth of GDP than energy demand, the services sector having a growing share of the economy, use of energy efficiency programmes, etc.

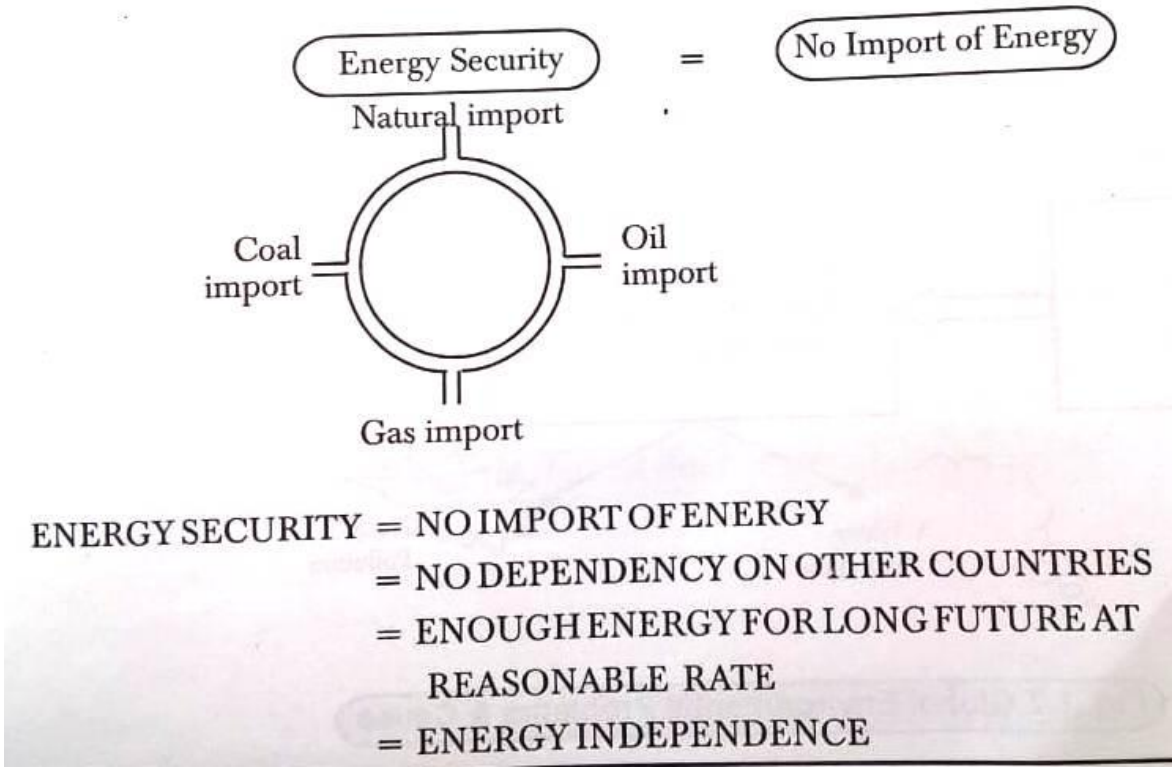
Energy Security



- Energy should secured for long time a nation.
- Huge energy resources will progress and develop rapidly.
- Energy security: Availability of all forms of energy at al times in necessary quantity and best quality at a affordable prices.
- Ensuring and guarantying energy supply to energy demand all times at a optimum charge.
- ES makes Energy Independence or reducing dependency of imported energy sources from other nation.

Energy Sources	$>$	Energy demand	$\Rightarrow$	Energy Security or Energy Independency
Energy Sources	$<$	Energy demand	$\Rightarrow$	Unsecured Energy or Energy dependant
Energy Sources	$=$	Energy demand	$\Rightarrow$	Unpredictable because may be future demand of energy increases.

Energy Demand & Production in India (2008)		
Energy	Production	Demand
Coal	290 Million tonnes/yr	510 Million tonnes/yr
Oil	34 Million Tonnes/yr	140 Million Tonnes/yr
Gas	67 Mcmd	96 Mcmd



- Options to achieve energy Security:

1. Appropriate EC measures and implementations
2. Expand the use of renewable energy
3. Implement a roadmap for a hydrogen economy
4. Expand the capacity of nuclear power generation
5. Remove the hurdles in the growth of hydro power potentials
6. Use substantially biomass, biogas and biofuels
7. Reduce demand by EC measures and aware strongly about energy management
8. Adoption advanced efficient technologies in industries, residential, Transportation
9. Augmenting the energy resources and supply.

ENERGY SECURITY CONCERNS

New cold war in Europe as Russia turns off gas supplies

By Daniel McLaughlin in Budapest and Vanessa Mock in Brussels

Wednesday, 7 January 2009

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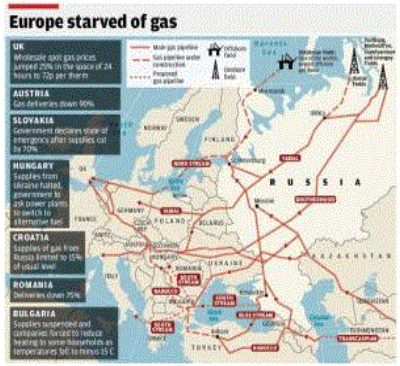
Fears of a deep chill spread across Europe yesterday after a row between Russia and Ukraine over gas prices cut supplies to the rest of the continent on a day of plummeting temperatures and heavy snowfalls.

The European Union said the situation was "completely unacceptable" as thousands of businesses were urged to switch fuels, and households struggled to keep warm in sub-zero temperatures. But there was no sign of an end to the standoff between Russia's energy monopoly Gazprom and Ukraine, locked in battle since New Year's Day.

Gazprom stopped pumping gas to Ukraine for domestic consumption on 1 January after the



INDEPENDENT GRAPHICS

China blocked exports of rare earth metals to Japan, traders claim

China blocked exports of rare earth metals to Japan days before Tokyo's decision on Friday to free a Chinese boat captain whose detention sparked the worst diplomatic row between the sides in years, traders said.

Adani buys Australian coal port for $1.98bn

By Peter Smith in Sydney and James Fontanella-Khan in Mumbai
Published: May 3 2011 12:30 | Last updated: May 3 2011 12:30

India has underlined its desire to play a bigger role in the development of Australia's coal sector after **Adani Enterprises**, the country's largest coal importer, agreed to buy Queensland's Abbot Point Coal Terminal for A$1.83bn ($1.98bn).

It is the latest in a spate of deals by Indian groups in Australia and elsewhere as the country secures more energy resources to meet rising demand for power to complete vital infrastructure projects.

Source : Telegraph, FT

End Of Presentation

Thank You All