Energy Resources, Economics and Environment
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Lecture 4 P3
Energy Balance of Australia

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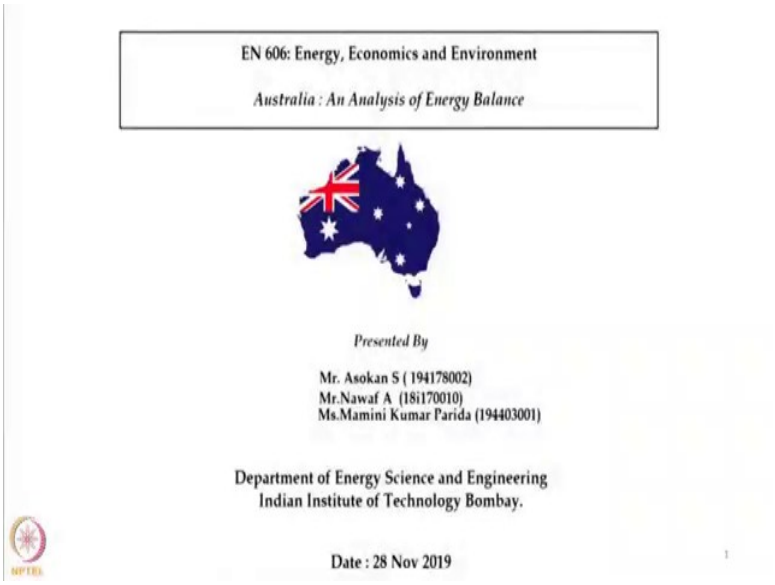

Hello everyone, my name is Ashogan. My team members are Mr. Nawaf and Miss. Mamni Farida. We are going to discuss about an analysis of energy balance for Australia. Australia is the sixth biggest country in the world. They are having the population of 2.5 crore, out of this 30% people are youngsters those who are contributing more in their GDP.

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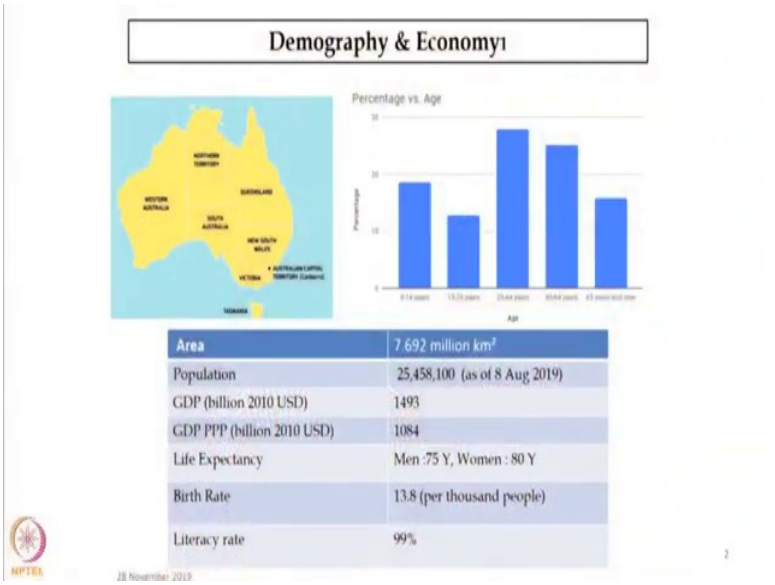

Life expectancy of Australia men is 75 and woman it is 80. The literacy rate of Australia is 99%. The GDP comes from Australia is most of them from service sectors, then industrial sectors then agriculture.

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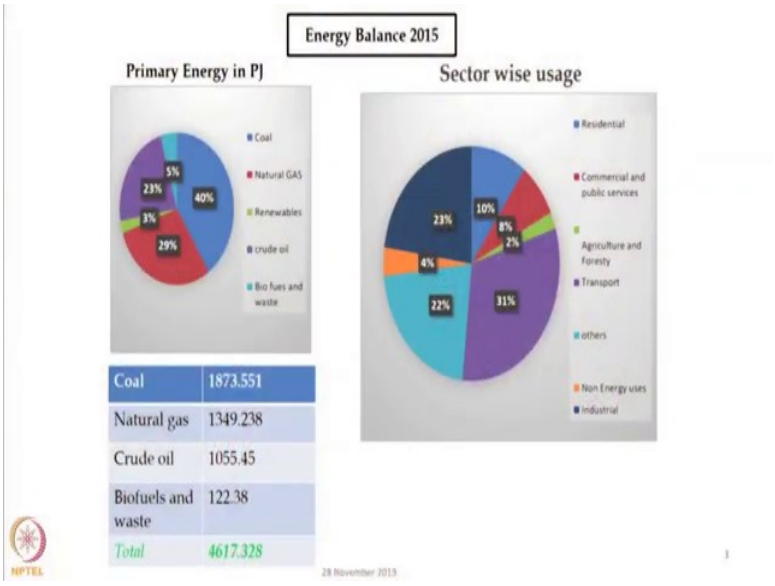

We will talk about the energy 40%of energy consumed from coal and 29%comes from natural gases, but the amount of renewable energy is very very less. The sector wise, transportation sectors and industrial sectors consume more energy.

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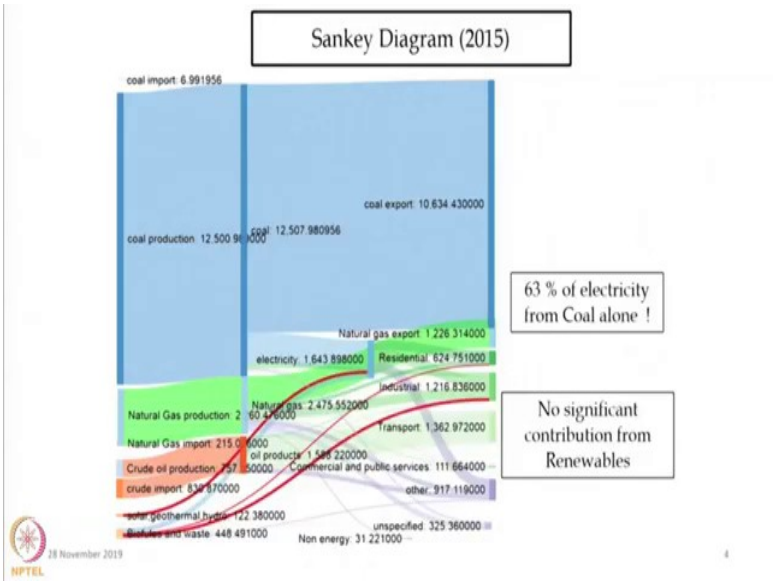

From the Sankey diagram, it is clear that the coal productions having the line share and next we have natural gases. It observe that, 63%of electricity comes from coal alone and there is no significant contribution from any renewable energy sources.

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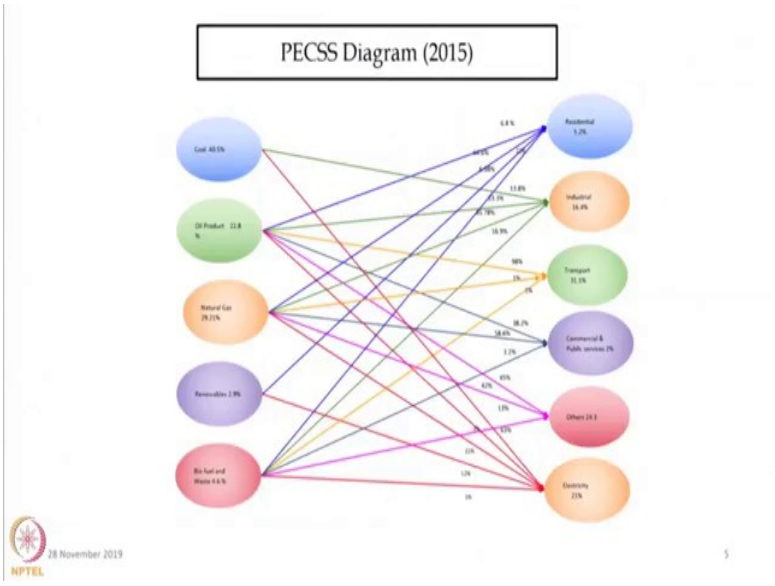

This is primary energy consumption by source and sector diagram. The source are coal, natural gas, oil, renewable etc. The sectors are residential, industrial, transport, etc. The transportation and industrial sector consume more energy in Australia.

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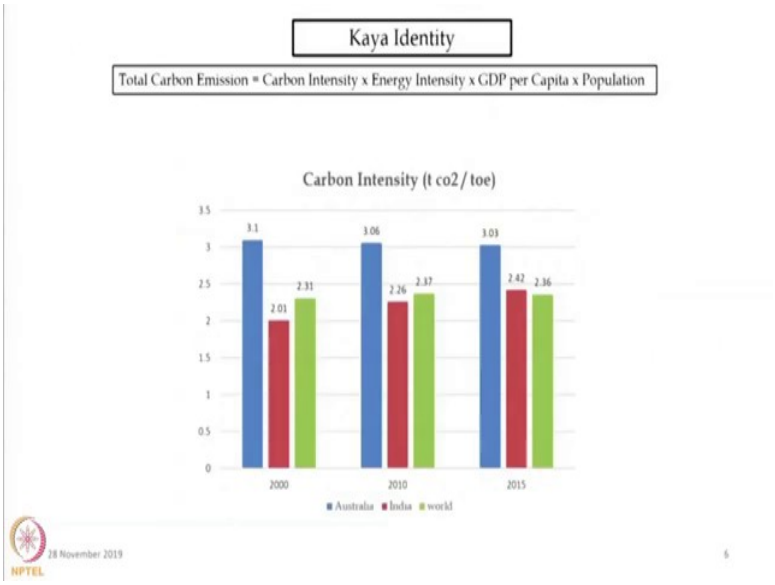

From the Kaya identity, it is very clear that the carbon intensity is higher in Australia. What is carbon intensity? The CO_2 emission for generating particular amount of energy.

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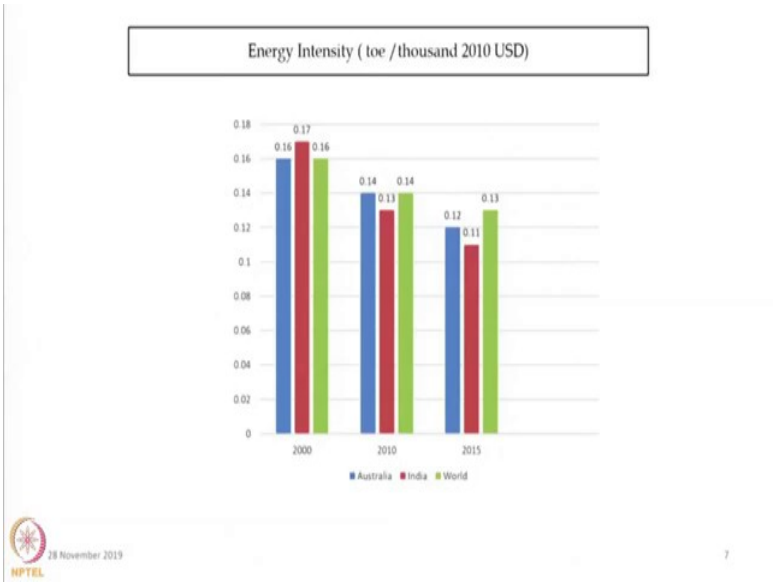

As well as, the energy intensity means it is measured as unit of energy per unit of GDP. So here, the energy intensity is, Australia is higher than India.

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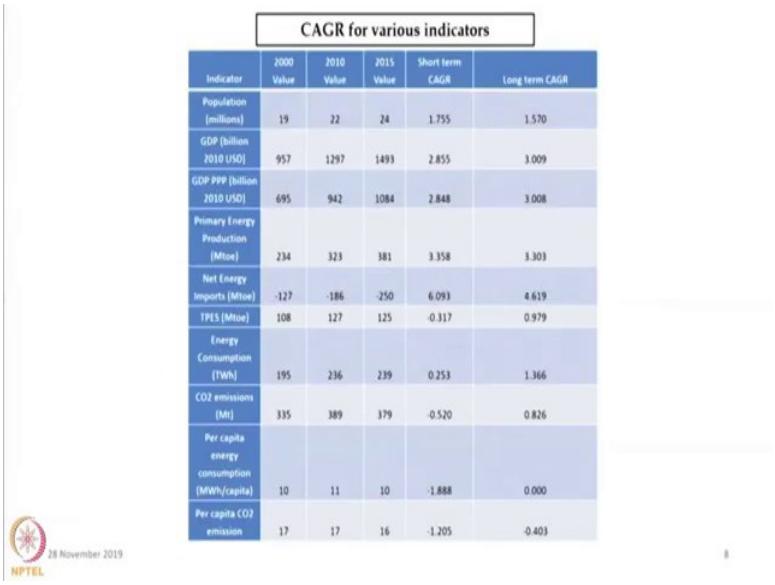

Indicator	2000 Value	2010 Value	2015 Value	Short term CAGR	Long term CAGR
Population (millions)	19	22	24	1.755	1.570
GDP (billion 2010 USD)	957	1297	1493	2.855	3.009
GDP PPP (billion 2010 USD)	695	942	1084	2.848	3.008
Primary Energy Production (Mtoe)	234	323	381	3.358	3.303
Net Energy Imports (Mtoe)	-127	-186	-250	6.093	4.619
TPES (Mtoe)	108	127	125	-0.317	0.979
Energy Consumption (TWh)	195	236	239	0.253	1.366
CO2 emissions (Mt)	335	389	379	-0.520	0.826
Per capita energy consumption (MWh/capita)	10	11	10	-1.888	0.000
Per capita CO2 emission	17	17	16	-1.205	-0.403

Cumulative annual growth rate for various indicators given here. It shows that the net energy inputs each and every year it is increasing. As well as the CO_2 emission is higher compared to India for Australia, but the per capita energy consumption is very good compare to India in the case of Australia.

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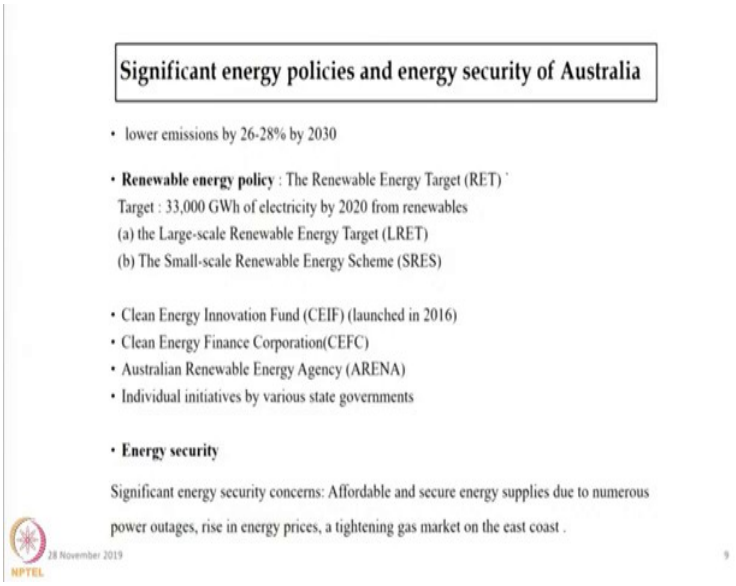

Regarding significant policies, Australia has the target to reduce 26 to 28% of CO_2 emissions by 2030. And Australia having the target like large-scale renewable energy target and small scale renewable energy scheme. The large-scale renewable energy target, it says that those who are using more energy for their industry operations, some particular amount of energy they should use from renewable energy.

The small-scale renewable energy scheme it suppose that people those who are using renewable energy sources by providing subsidy. Also clean energy finance corporation and Australian Renewable Energy Agency providing fund to the agencies or industry those who are working on renewable energy sources. Regarding energy security of Australia because of rising energy price as well as tightening gas market on the East Coast as well as numerous power outages slightly they are having lower side of energy security. However, it can be improved by using renewable energy sources in further days.

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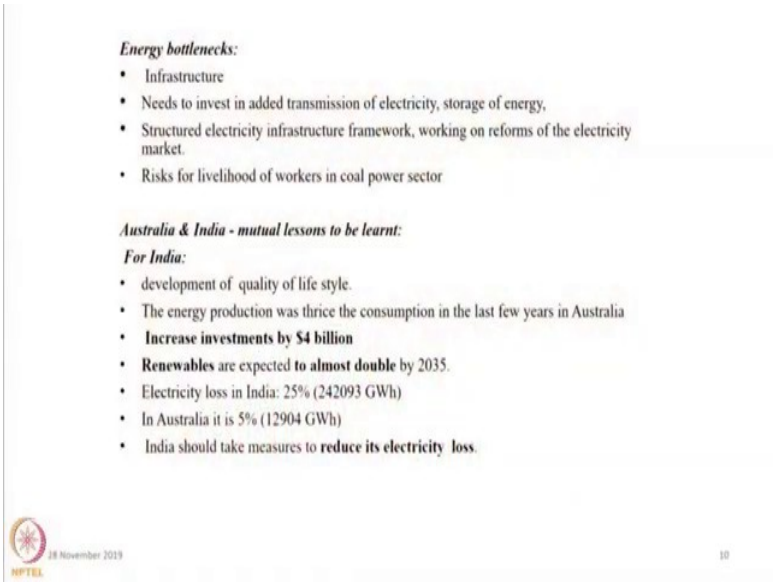

The energy bottlenecks for Australia is infrastructure mainly, that is they have to invest more and more money for the electricity transmission as well as storage of energy. Structured electricity infrastructure framework definitely in need for them and working on reforms of electricity market is compulsory for Australia to develop. The main bottleneck is, when the CO_2 emission is reduced, the coal plant supposed to be stopped or reduced.

So, that time the employee of coal plant will, may loss the job it will spoil your livelihood. For India, the development of life cycle is, lifestyle is very important for India. The reason is per capita for India energy consumption is less compared to Australia, it shows that the life quality we supposed to be improved. And the investment for the renewable energy generation supposed to be improved as Australia is improving day by day.

The electricity loss in India is 25%, whereas in Australia just 5%. It shows that we have to give more concentration to save the electricity. For Australia per capita CO_2 is huge in Australia. So, diversification of fuels also they should take care of.

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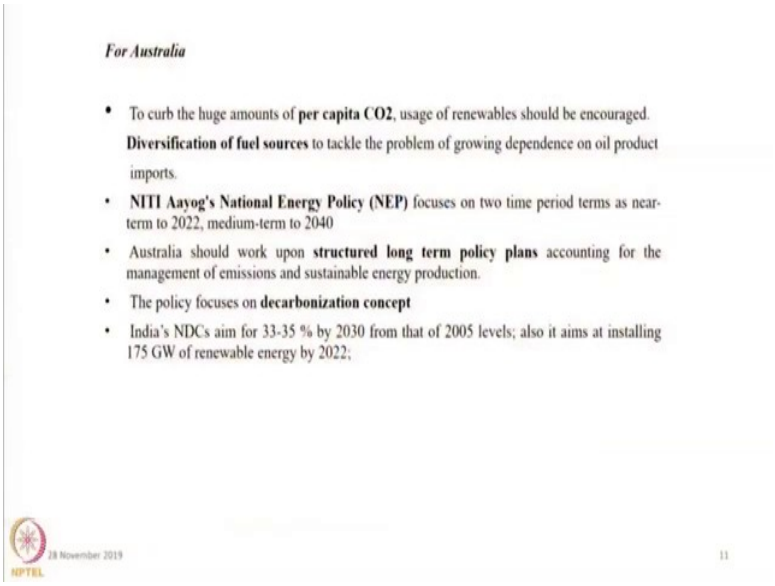

In India we have national energy policy it providing or it, it is intended to provide affordable energy with good energy security and improving energy security for their systems. Australia should have the structured long-term policy plan like India is having as well as India's NDCs about to reduce 33 to 35% of CO_2 in the nearby future the same kind of plans Australia should take care.

Say example, India is installing 175GW of renewable energy by 2020 that is our target. As well as Australia should go ahead with the renewable energy in the fast manner.

For the conclusion, Australia having lot of CO_2 emissions per capita CO_2 emission is very high.

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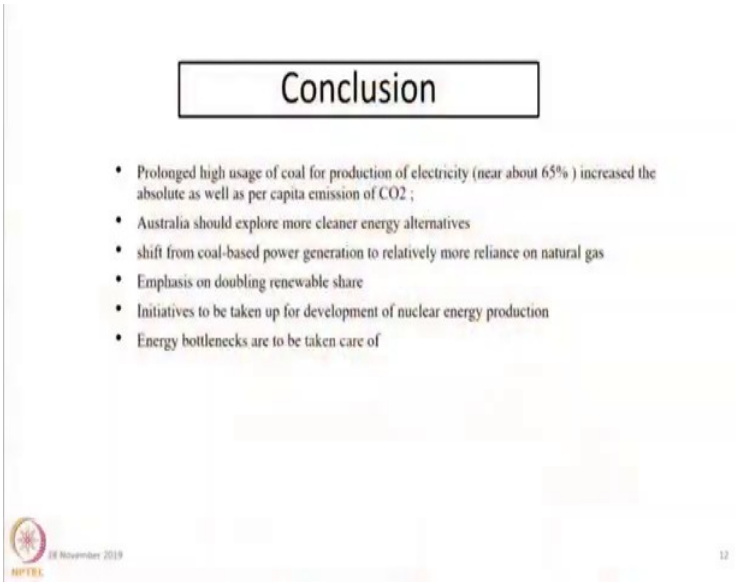

They are having a lot of uranium energy as well as sunlight, so they can make use of uranium and sunlight they can start the renewable energy source like solar and uranium. So, that the CO2 emission will be reduced, as well as diversification of fuel is very very important for Australia as the energy security can be improved because of that. The energy bottleneck should be taken care of Australia to take a further step for the renewable energy sources, thank you.