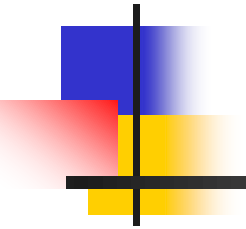
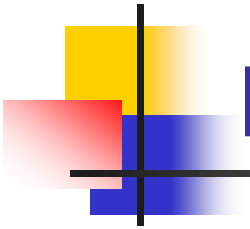


EN 653/PS 611
Energy Policy Analysis

Introduction
L1 (3rd January 2019)



Preamble

#1 What are your expectations from this course?

#2 Why is energy policy important?

Delhi Pollution

Good idea?

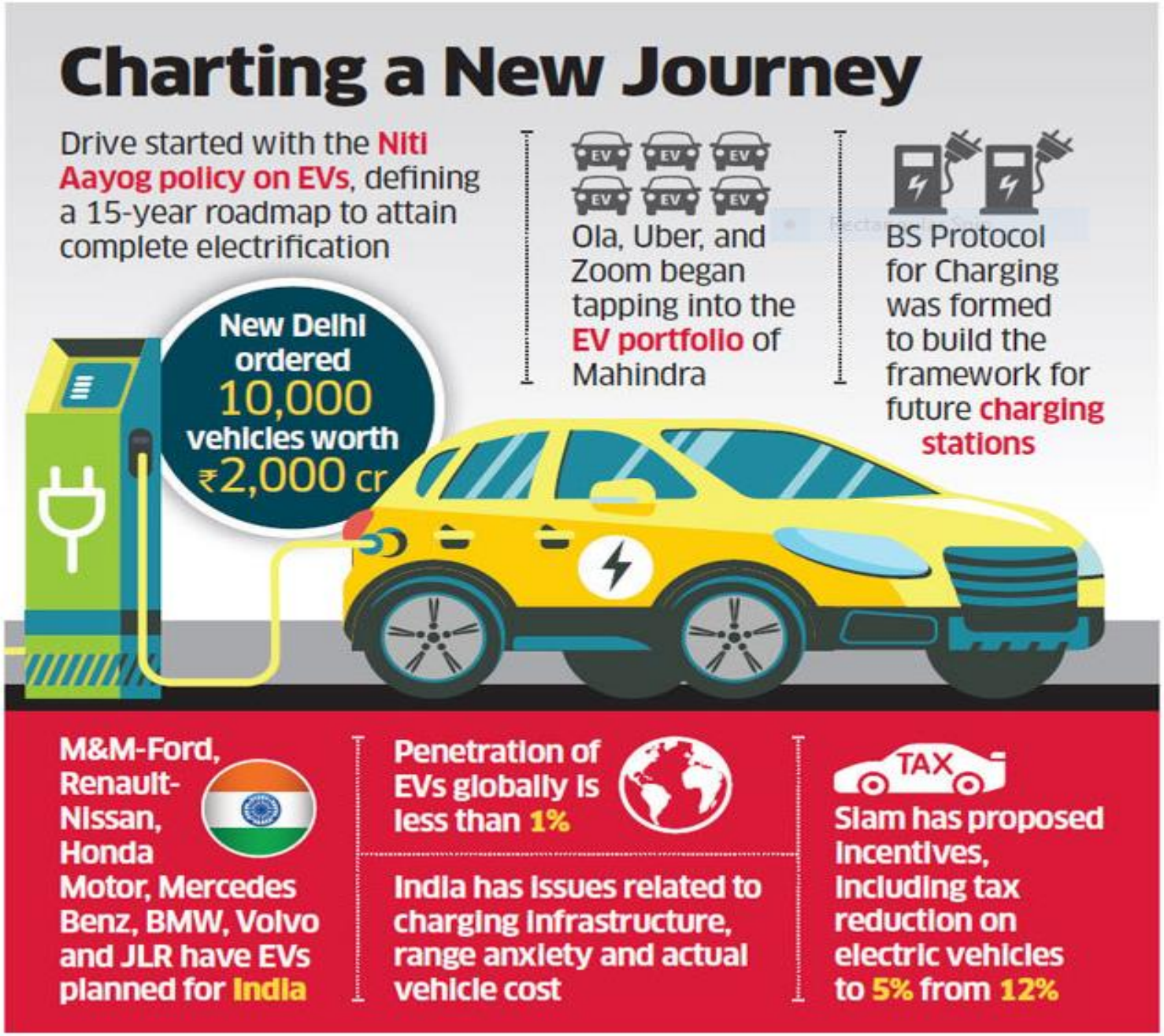
World Bank Group pledges to stop investing in oil and gas exploration

3

The world bank will cease funding of oil and gas exploration after 2019 CREDIT: DAVID MCNEW

By **Anna Isaac,** ECONOMICS CORRESPONDENT

12 DECEMBER 2017 • 7:28PM



https://economictimes.indiatimes.com/industry/auto/news/shock-and-awe-india-has-a-date-with-electric-vehicles/articleshow/62346516.cms

What? Where?

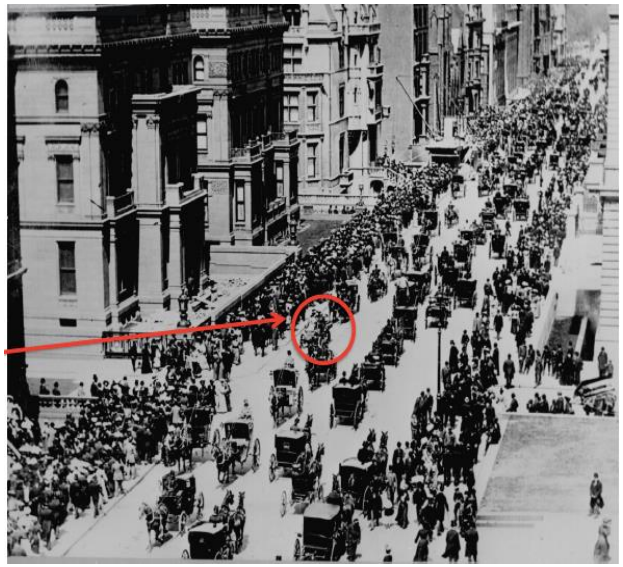

TESLA
DANGER
DANGER
KEEP OUT


Click to add text

Transport Transitions

5th Avenue New York

15th April 1900



March 23, 1913

https://therationalpessimist.com/2015/03/22/charts-du-jour-21-march-2015-battery-banter/

Clicker Questions

Class Participation

Student Engagement

https://www1.iclicker.com/

http://www.et.iitb.ac.in/TeachingStrategies.html#PI

Responses without Clickers

http://www.et.iitb.ac.in/TeachingStrategies.html#PI

"India is likely to experience the energy surplus of 1.1 per cent in 2016-17," says the Load Generation and Balance Report (LGBR) 2016-17 of the Central Electricity Authority (CEA), which functions under the Power Ministry.

Which of the following is true?

i) This cannot be true since India has power cuts
ii) Power cuts are only due to sabotage and faults
iii) Power cuts are only due to power plant tripping
iv) CEA reports are likely to be biased or based on incorrect data
v) This is true. Load shedding is prevalent in many areas. This paradox has other reasons

Which country emitted the most carbon dioxide in 2018?

i) USA
ii) India
iii) Brazil
iv) China
v) Russia

What energy source has Bill Gates invested in and championed over the last few years?

i) Biomass Energy
ii) Nuclear Energy
iii) Solar Power
iv) Wind Energy
v) Tidal Energy

Course Objective

- The course will provide the tools and techniques necessary for analyzing energy policies.
- Students will be expected to carry out a project to analyse an existing policy in a specific context or design a policy intervention for a specific goal

Evaluation Scheme

- End Semester 40 marks
- In semester 60 marks
  - Mid-Semester Test 10 marks
  - Weekly Quizzes 10 marks
  - Reading Assignment 10 marks
  - Course Project 30 marks

Attendance

Attendance in classes, presentations, activities is compulsory.

To encourage 100% attendance, an incentive of + 5 marks in the in semester will be given for 90%+ attendance, a penalty of -3 marks for attendance between 70-80 % and a penalty of -5 marks for attendance less than 70%.

Assignment (Groups of three)

- Analyse the nationally determined contribution (NDC) of your (allotted) country.

NDC submissions are available at:

- https://www4.unfccc.int/sites/submissions/indc/Submission%20Pages/submissions.aspx

Assignment

a) NDC, Policies, Plans-vis-à-vis existing country situation

b) Comment/ Critique- Comparison with India/ World

c) Discuss country's position and strategies in the global negotiations and defend its NDC

Countries

China, USA, Canada, Germany,UK, Sweden,France, Brazil, Saudi Arabia, South Africa, Argentina, Ethiopia. Kenya, South Korea, Sri Lanka, Nepal, Russia, Indonesia

Course Project (group of three)

- Analyse an existing policy in a specific context
- Design a policy intervention for a specific goal

Suggested themes (indicative)

a)Energy Access

b) Sustainable Mass Transit for a city

c) Energy R&D- policies to enable future technology development

d) Distributed Smart Energy Systems

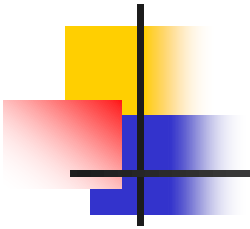
e)Global Carbon Management

f)Low Carbon Industrial Processes

g)Low Carbon Growth strategy for a campus

h)100% Renewable Scenario

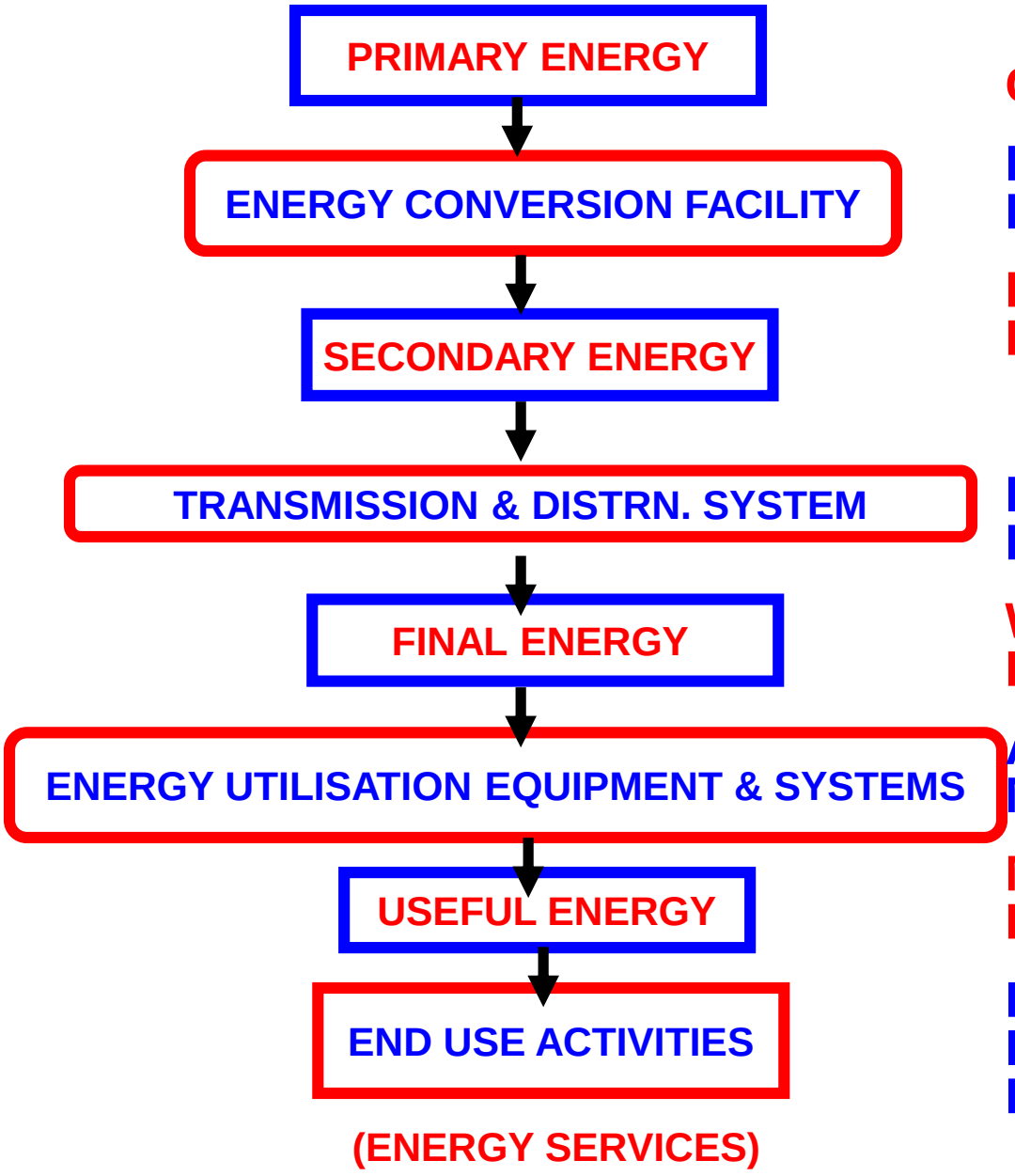
i)Energy from Waste



Timelines

- January 7 : Assignment country allotment
- January 14 : Finalisation of course project groups
- January 22 : Assignment submissions
- Jan 24, 29 (2 hours) : Assignment presentations/ discussions
- February 5 : Submission of course project plan / write-up
- March 7, 11,12 : Interim presentation on course project progress
- April 11 : Final submission of course project
- April 12-19 : Final presentation (Extra slots to be decided for presentations)

ENERGY FLOW DIAGRAM



COAL, OIL, SOLAR, GAS

POWER PLANT, REFINERIES

REFINED OIL, ELECTRICITY

RAILWAYS, TRUCKS, PIPELINES

WHAT CONSUMERS BUY DELIVERED ENERGY

AUTOMOBILE, LAMP, MOTOR, STOVE

MOTIVE POWER
RADIANT ENERGY

DISTANCE TRAVELLED, ILLUMINATION,COOKED FOOD etc..

Energy End Uses

End Use	Energy Service	Device
Cooking	Food Cooked	Chullah, stove
Lighting	Illumination	Incandescent Fluorescent, CFL
Transport	Distance travelled	Cycle, car, train, motorcycle, bus
Motive Power	Shaft work	motors
Cooling	Space Cooled	Fans,AC, refrig
Heating	Fluid heated	Boiler, Geyser

India and World (Selected Indicators for 2012)

Population	**1237 million**	**7037 million**
GDP (PPP)	**5567 Billion 2005 US$ (4500 $/person)**	**82901 Billion 2005 US$ (11780 $/person)**
Primary Energy	**33 EJ**	**559 EJ**
Energy/person	**26.6 GJ/person/year**	**84.4 GJ/person/year**
Electricity/person	**760 kWh/capita/year**	**2972 kWh/capita/year**
CO2 emissions	**1626 Million tonnes**	**31734 Million tonnes**
Per person	**1.58 tonnes /capita/year**	**4.51 tonnes /capita/year**
Per GDP	**0.35 kg /US$ ppp**	**0.38 kg /US$ ppp**

Source: IEA, Key World Energy Statistics 2014

Contact

My contacts:
#7883 Office
DESE-CESE Building (Opp KV school)
2nd floor, Room no 12

rangan@iitb.ac.in
rangan.banerjee@gmail.com

Balkrishna Surve

bsurve@gmail.com

References

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