

Focus on Renewables

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Agenda

1. GHG Emission snapshot
2. Why Renewables?
3. Renewable Energy Options
4. Alternate Energy Options
5. The Road Ahead: Key Issues & Concerns

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Telecom industry carbon footprint

330,000 Towers
@ 1.7 tenancy ratio



450,000 Towers
@ 1.9 tenancy ratio

Carbon Footprints - Grid

Annual emission of
6.9million tons of CO2



Annual emission of
10.6 million tons of CO2

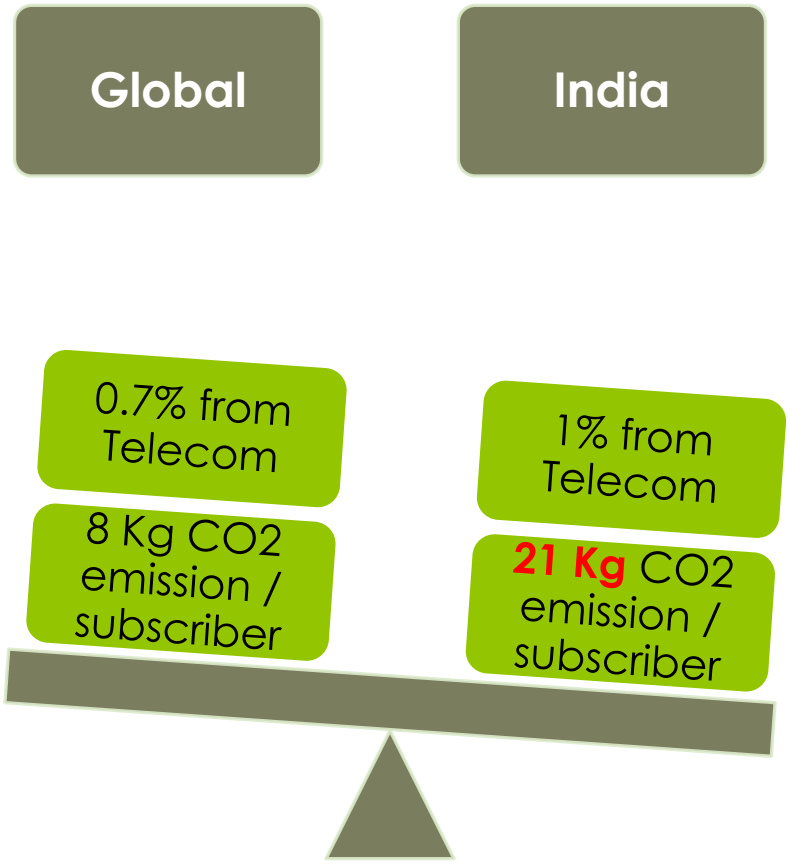
Carbon Footprints - Diesel

Annual emission of
3 million tons of CO2



Annual emission of
4.7 million tons of CO2

Overview of GHG Emissions

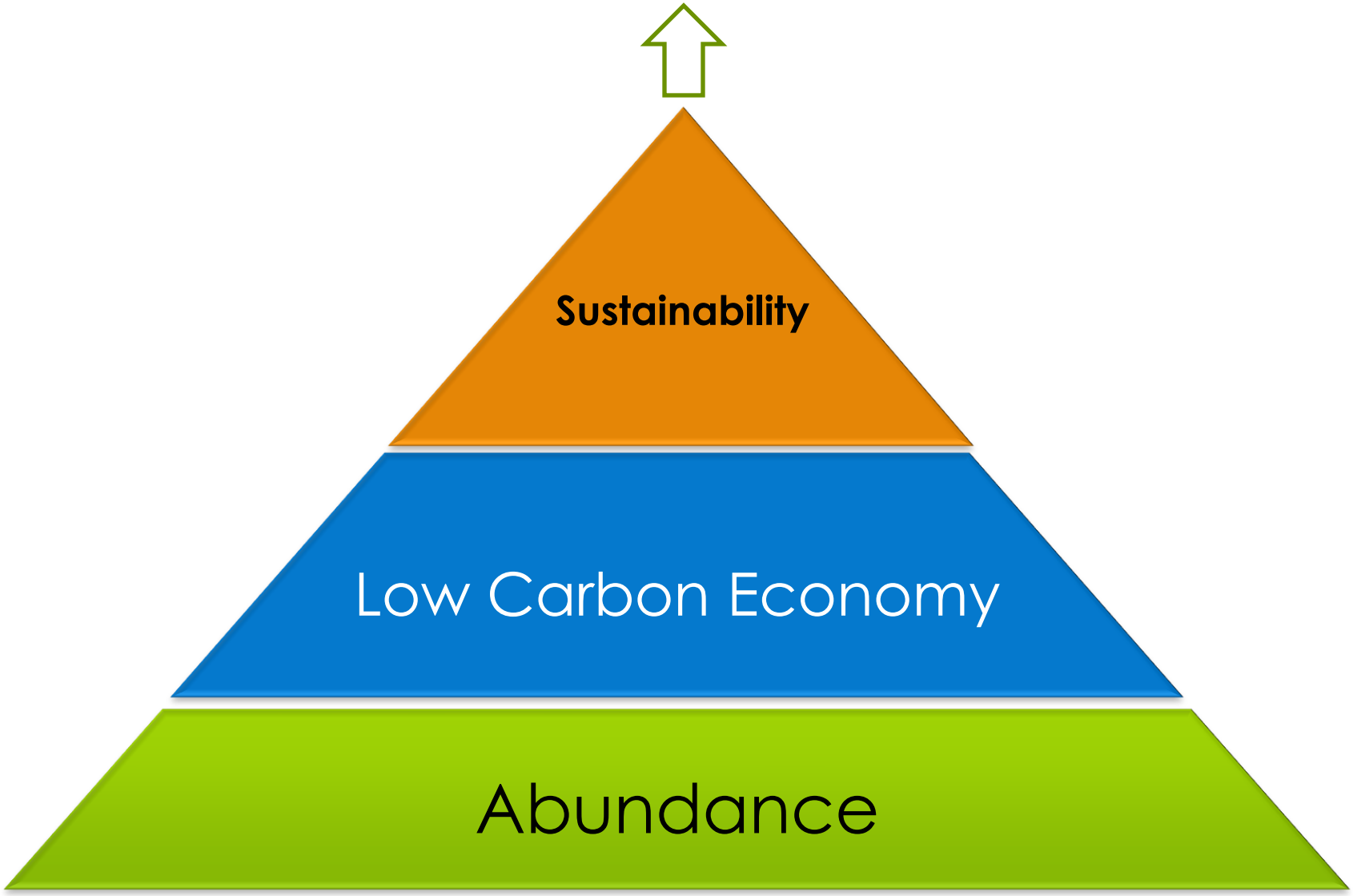


Source: TRAI

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Why Renewables?



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Renewable Energy Options for Telecom



Telecom Tower



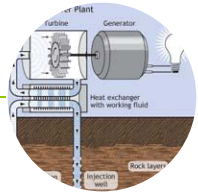
Solar



Wind



Biomass



Geothermal



Fuel Cell

Pros & Cons of Renewable energy

Advantages

- Clean & Green Energy
- Silent
- Free and Infinite
- Well suitable for stand alone applications
- Low maintenance costs
- Long lifetime
- Simple operations

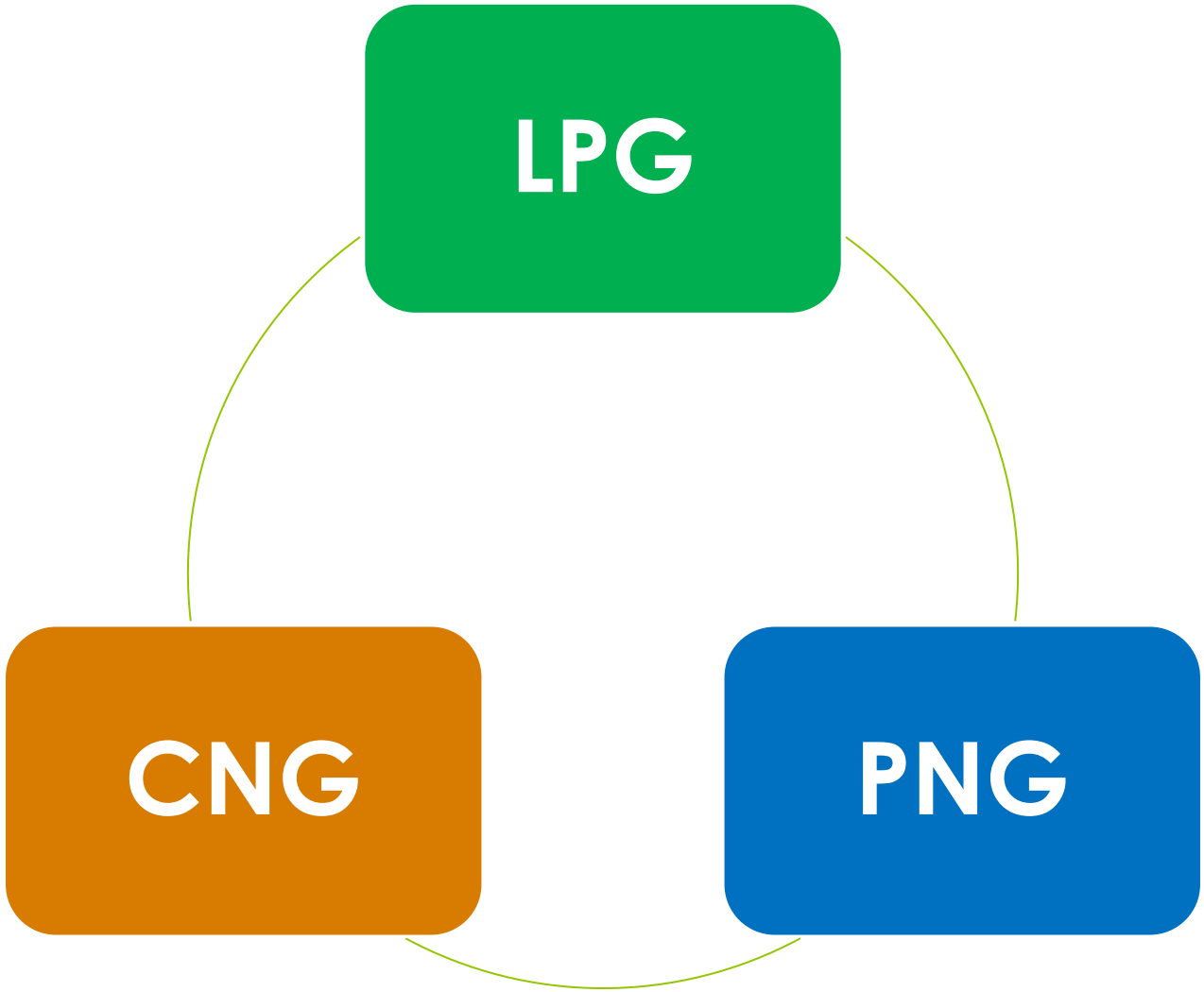
Disadvantages

- High CAPEX cost
- Nascent Technology
- Low efficiency
- Efficiency Degradation
- Storage systems
- Dependant upon natural conditions

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Alternate Energy Options for Telecom

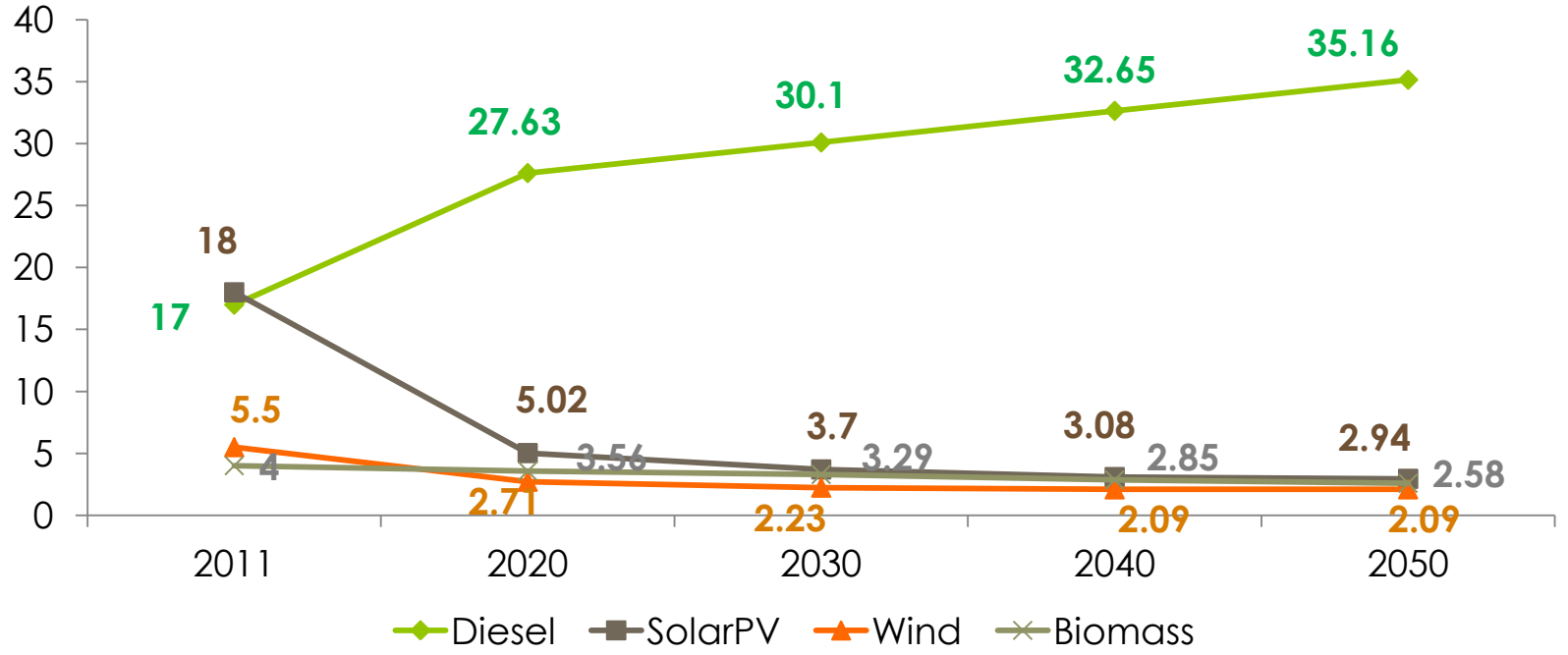


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Renewable vs Conventional Energy Cost



Cost of Generation per unit of electricity (Rs/KWH)

Difficult Today, Easy Tomorrow

Source: Diesel Cost- Report of The Expert Group, February 2,2010
Renewable Cost – www.energyblueprint.info

Way Forward: Collaborative model

Technology

Rs. A/kwh

Tower Companies provides Business Volume leading to reduction in cost

Technology → Tower Company

Rs. A-B/kwh

Government provides Financial Aid (Rs C/kwh) to Technology providers

Government → Technology → Tower Company

Rs. A-B-C /kwh (Subsidised Cost)

Way Forward: Collaborative model

RESCO (Renewable Energy Services Company) evolves that further reduces price by providing its competency



Rs. A-B-C -D/kwh (Subsidised Cost)

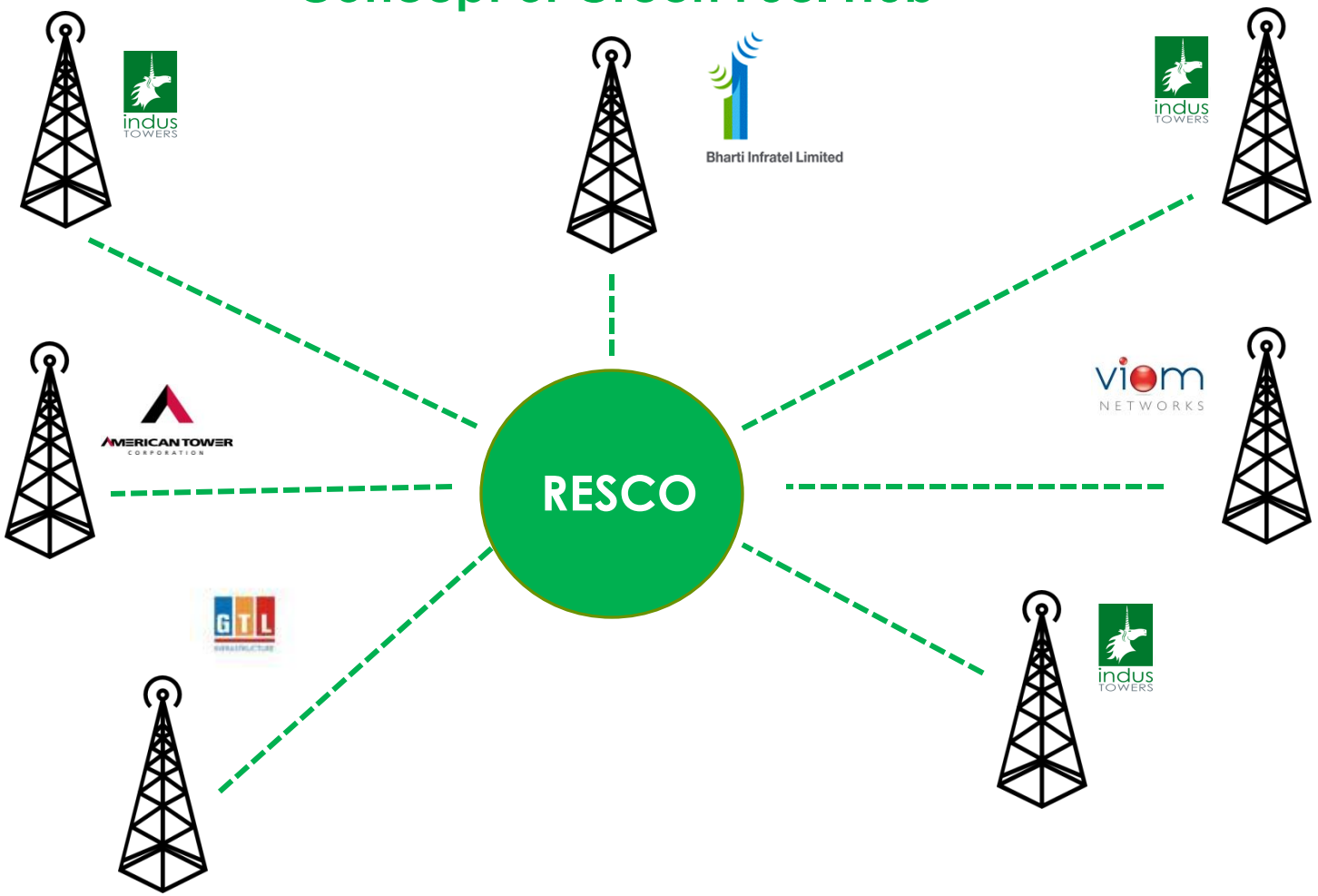
After Few Years, Technology will mature and Vendors, RESCO and Tower Companies will grow resulting into further reduction of cost. No further subsidy from Government will be required



Rs. X/kwh (Grid Parity)

Way Forward: Methodology

Concept of Green Fuel Hub



After Infra Sharing, Energy Sharing is the future !!



Thank You