

# Electrification of Road Transport

Necessity is the Mother of Invention

Dr Revin Panray Beeharry, CEO  
Sustainable Resource Management Ltd  
Mauritius

## Mount Everest, Nepal



## Kathmandu, Nepal



US Embassy in Nepal reports the AQI of PM 2.5 is at 155: Unhealthy

## Story of the Safa Tempo of Nepal



Lead Acid  
Deep Cycle



12\*12Volt  
Range 150 km/day  
1 Battery Swap

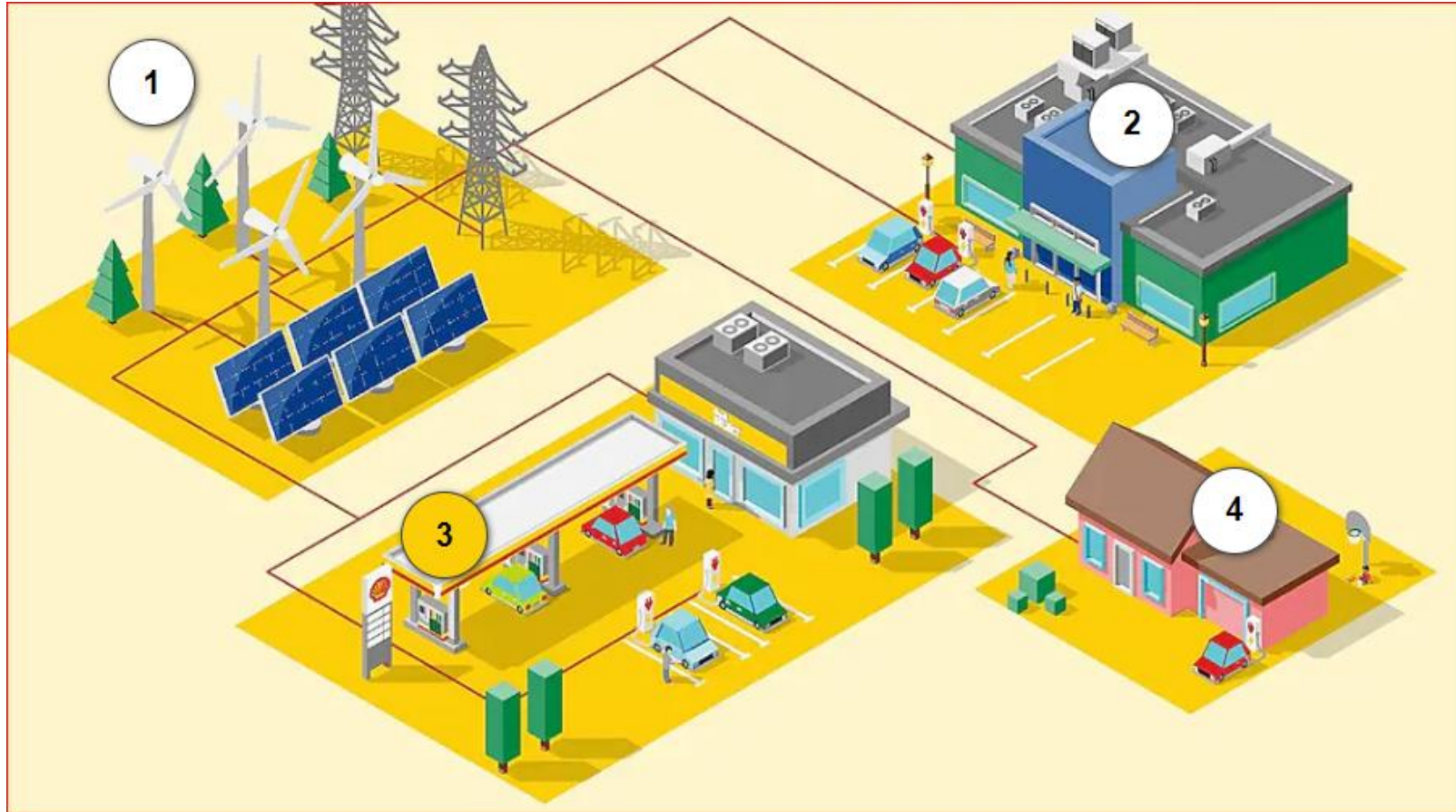


1997/2000 Global Resources Institute built a fleet of 8 Safa Tempo  
600 Safa Tempos serve 130,000 passengers in the Kathmandu Valley (pop 2.5 m)  
32 Battery Charging Stations



Green Energy Mobility platform (Sonika Manandhar) aims to empower women safa-tempo drivers with financing options so they can transition to Li Ion batteries.

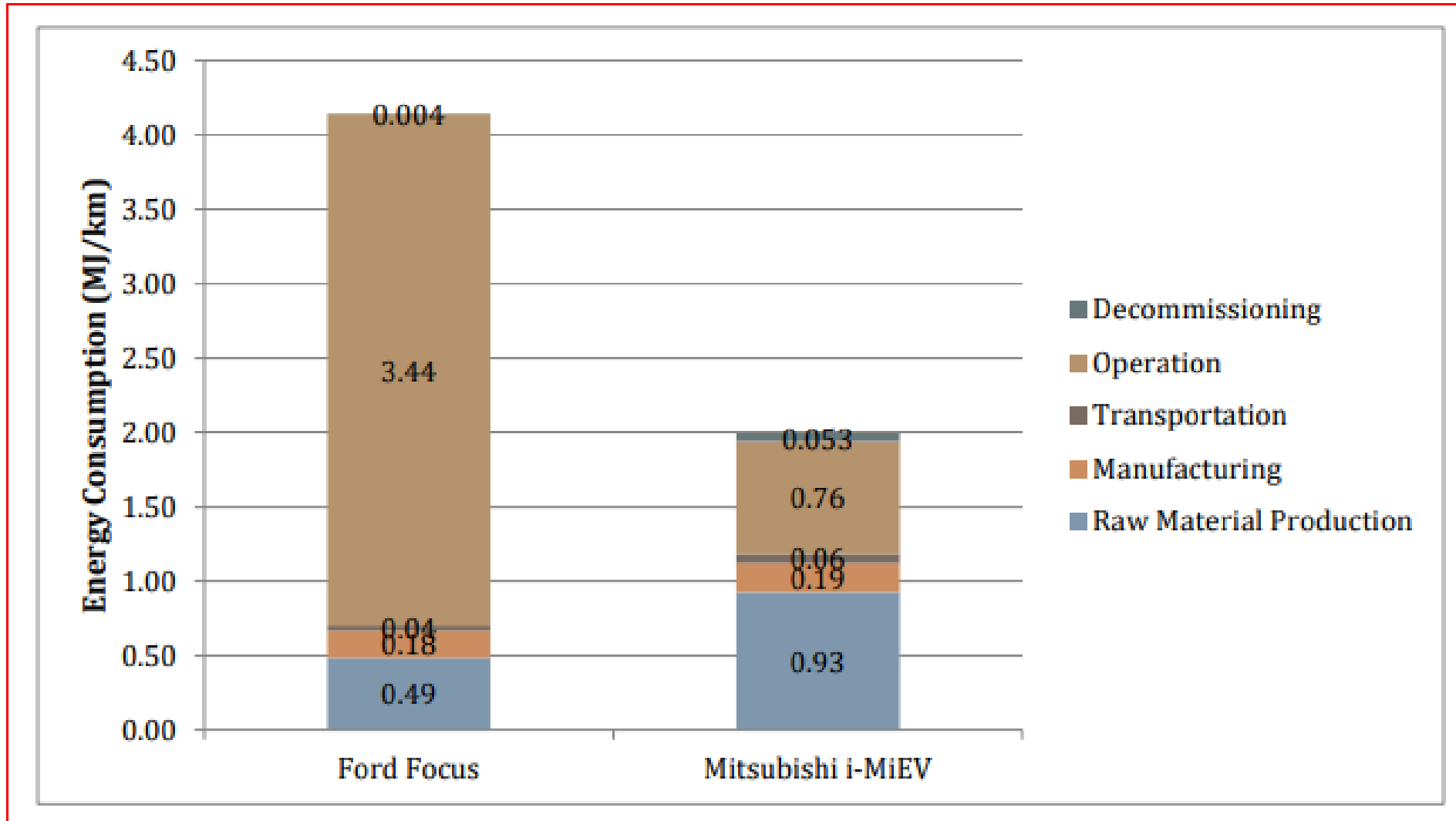
# The Big Picture

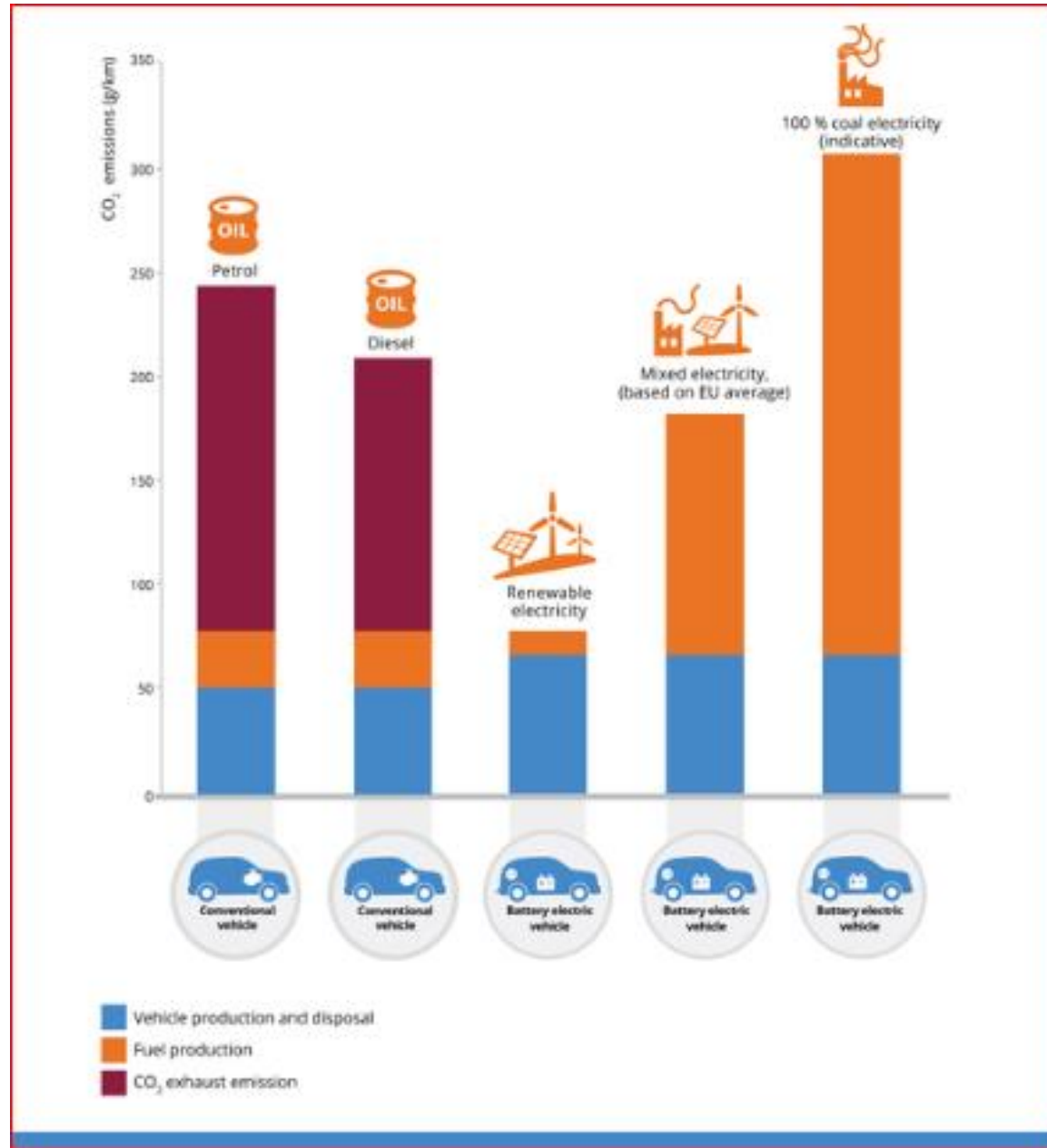


- **Electrification**
- **Connectivity**
- **Automation**

Source: Shell

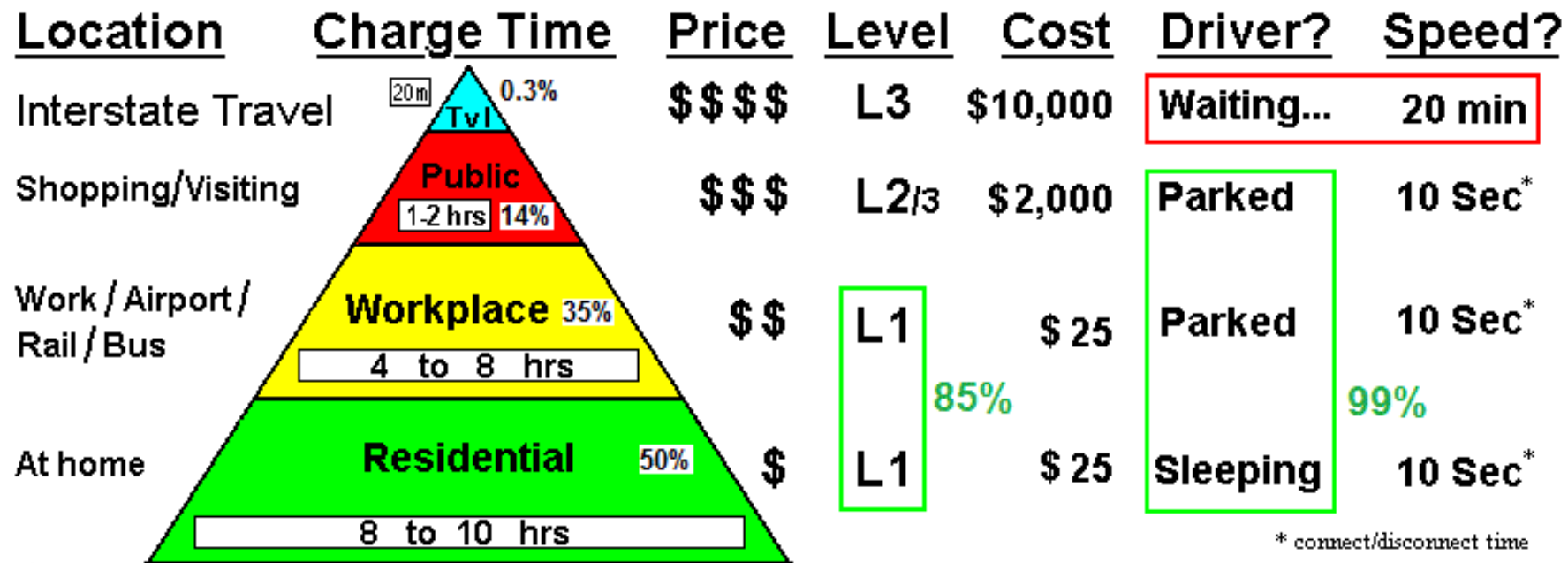
## Well to Wheel Energy Consumption Normalised over 150,000 km





Source: European Commission





\* connect/disconnect time

## How do you do it?

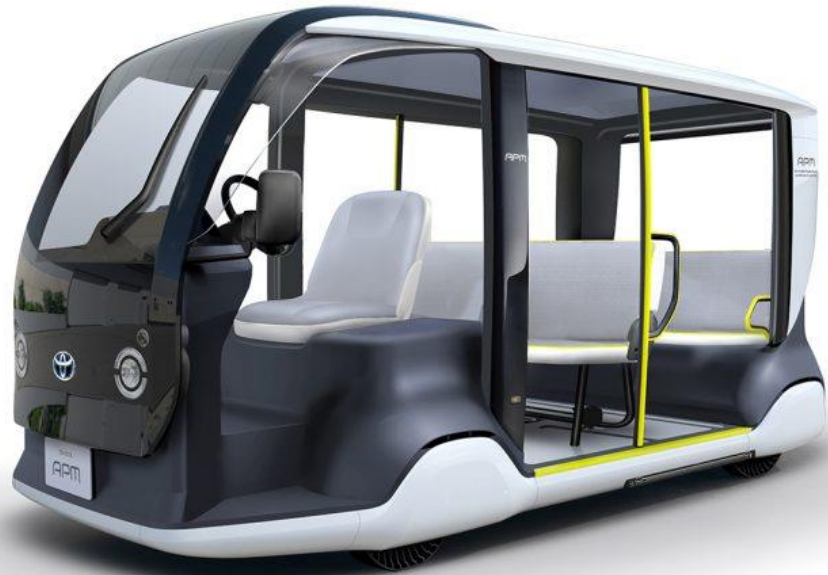


- 250,000 minibus taxis in South Africa,
- R50 billion/year industry
- Covers 220 kilometres per day,
- Employs 600,000 people
- 15 million commuter trips every day
- 69% of households use them

## Tough nut to crack or window of opportunity?



**Tokyo 2020  
Toyota**



Driver plus 5 passengers  
Range = 100 km

**Johannesburg 2020  
Mellowcab**



## Barriers or Drivers



Policy and  
Governance



Infrastructure  
and Markets



Financing  
and Resources



Data and  
Monitoring

## Watch Out



Egyptian Startup  
App based bus ride sharing  
Fixed Route  
Kenya  
Nigeria  
Pakistan  
Asia