

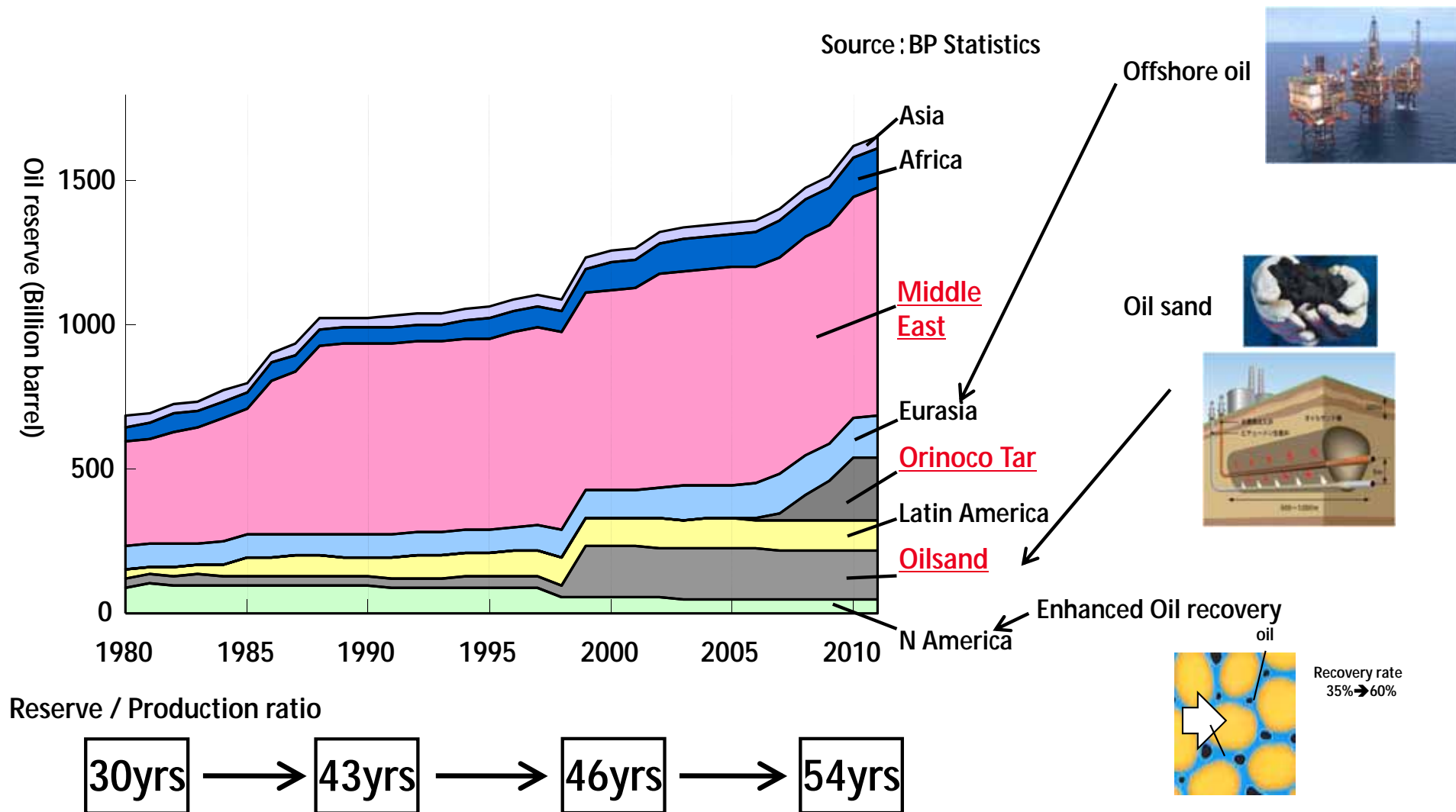


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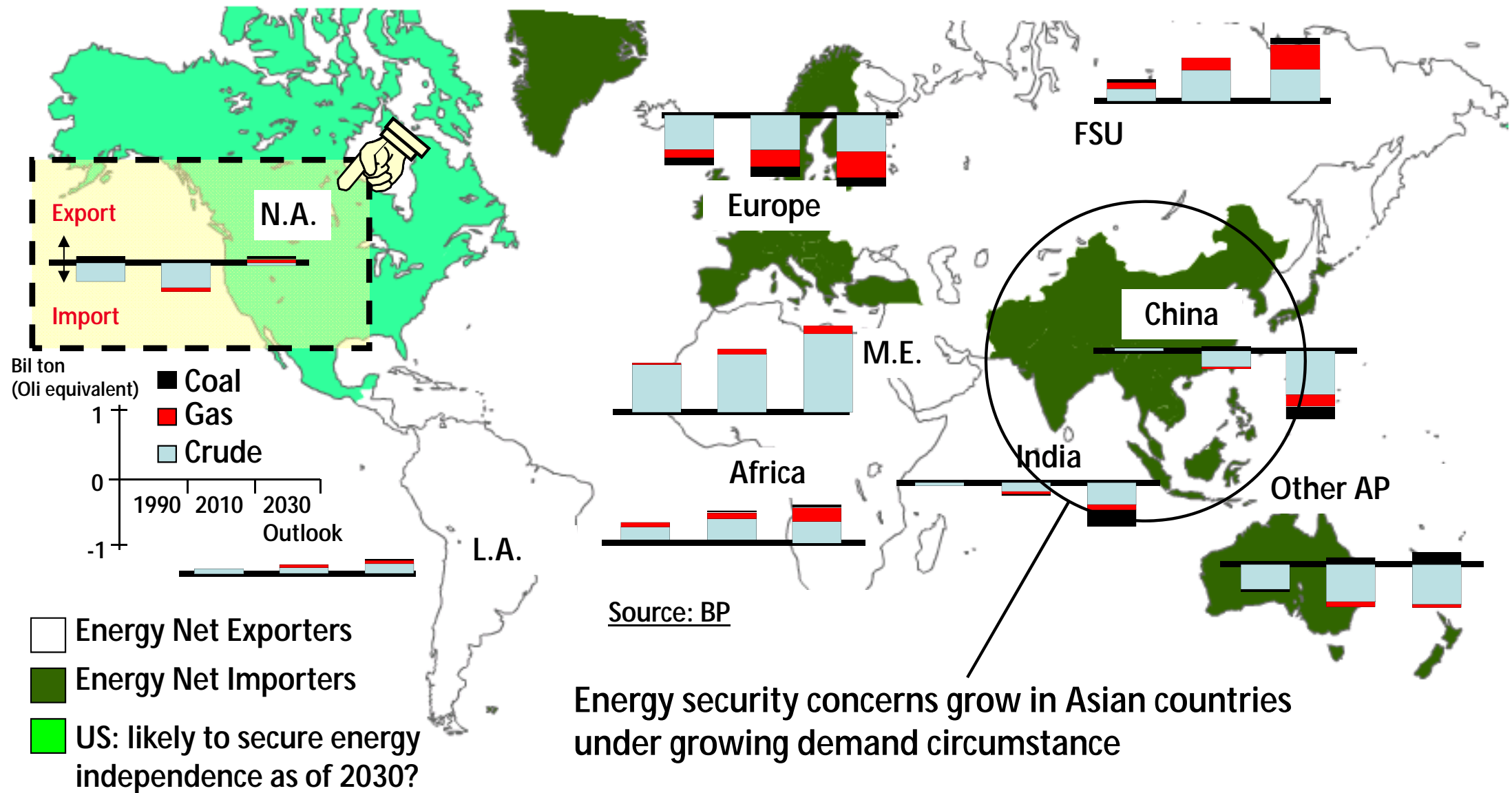
Our Energy View and Dialogue with Partners

Takayuki Kusajima
External Affairs Division
TOYOTA MOTOR CORPORATION
Jan. 2014

'Oil is available', said most reasonable analysis



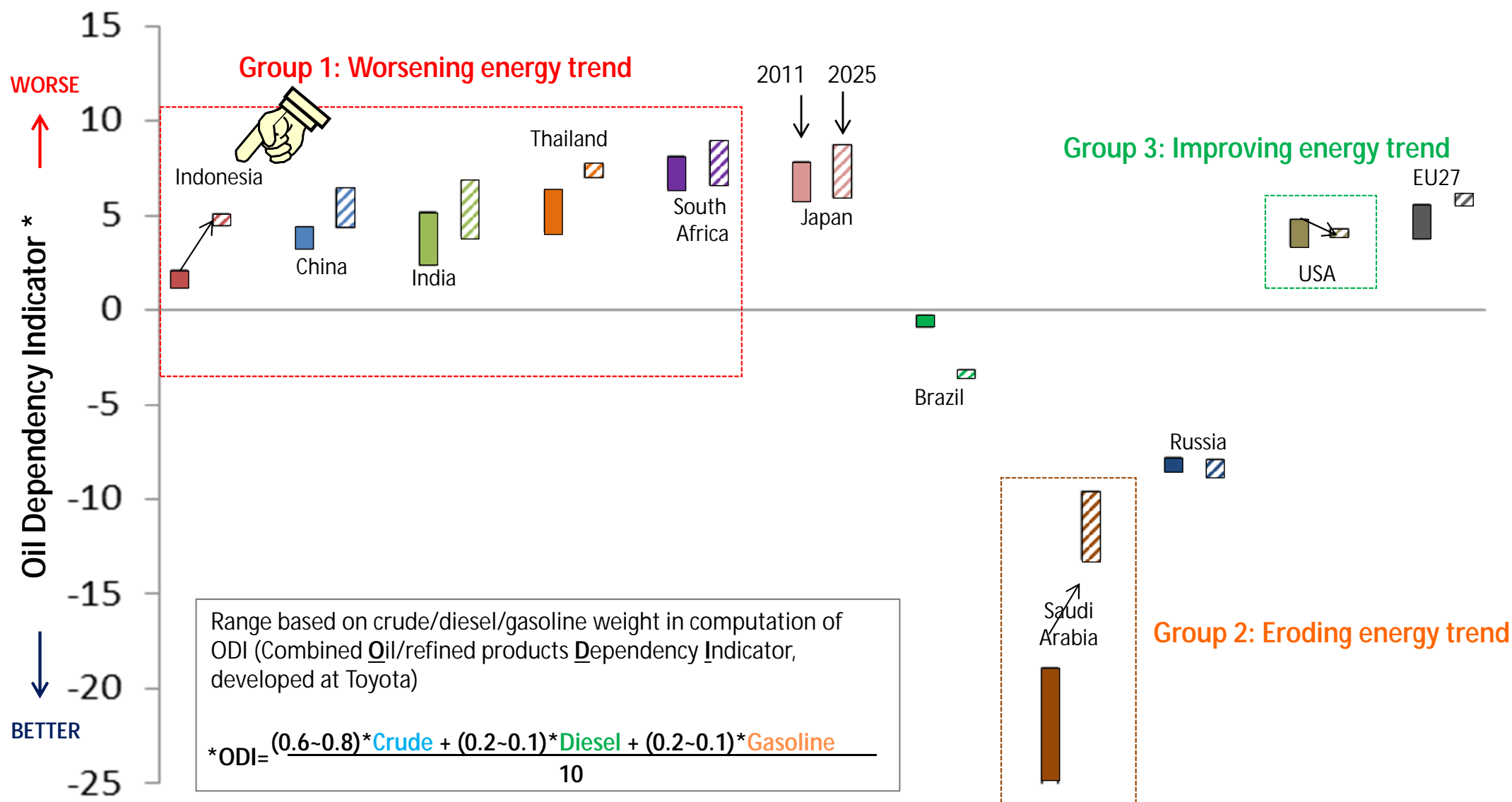
But it is geographically un-balanced





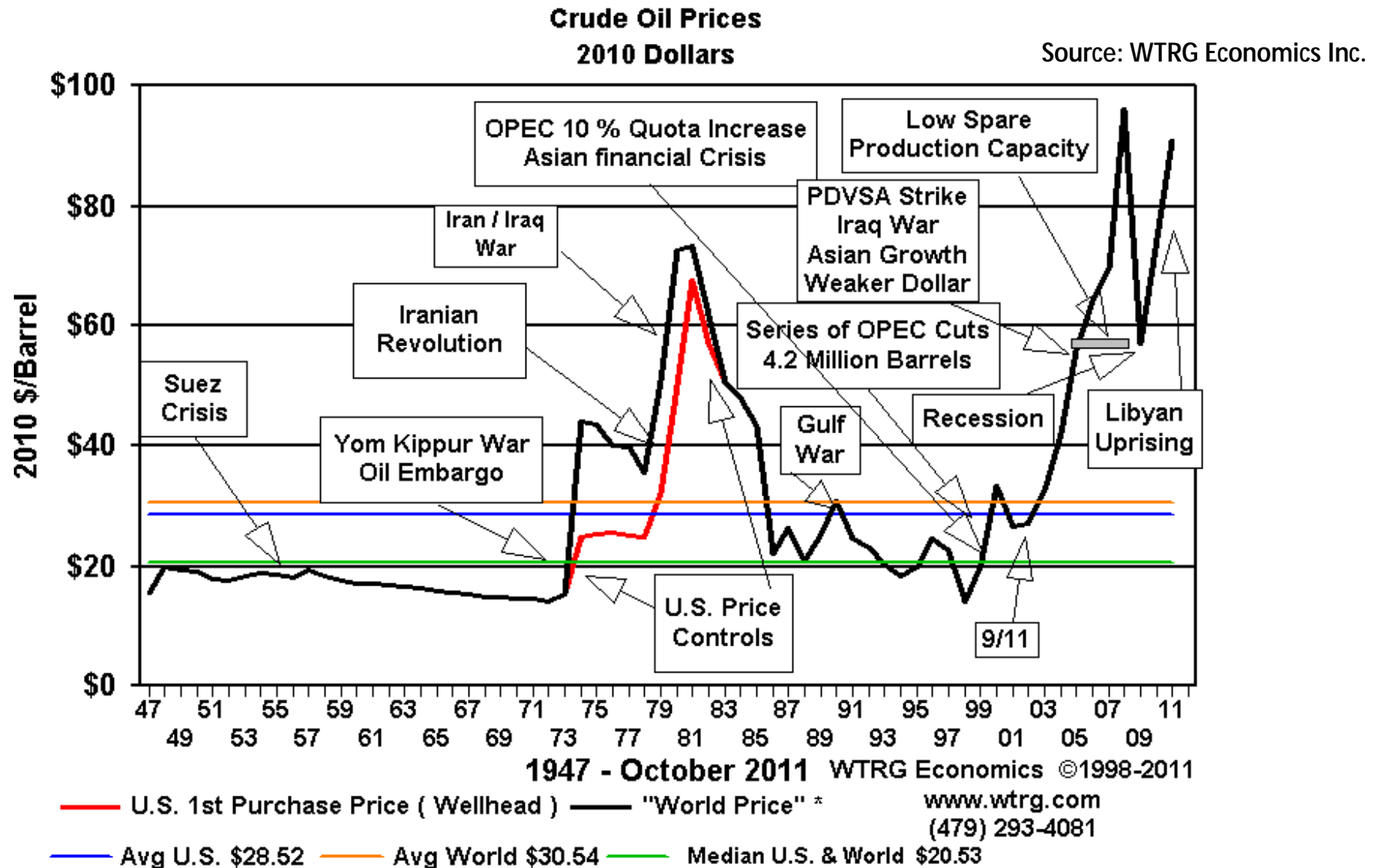
Growing energy security concern in non-OECD Countries

3 trends are identified: *Worsening-Eroding-Improving*



IHS data, 2013

Soaring crude price



Crude price is likely to keep soaring (short-term price crush might happen though)



Mitigating energy security concern

- Efficiency improvement at use

- Traffic flow improvement

- Encouragement of vehicle efficiency

- Toyota's initiative

- Traffic flow simulator

- Best energy mix study

- Alternating to domestic energy

- Production enhancement of domestic fossil energies

- Biofuels: Ethanol (for gasoline) and Biodiesel (for diesel fuel)

- Natural gas (CNG)

Vehicle efficiency improvements

Powertrain

Thermal Efficiency

- Start-stop
- Higher Compression



Transmission Efficiency

- CVT
- Multi-speeds AT



Hybrid System



Vehicle

Reduction of Air Drag



Weight Reduction



Lower Rolling Resistance



Efficiency Improvement: Achieved by Effort of Whole Vehicle Design/Technology



Efficient powertrains, compact cars and hybrids



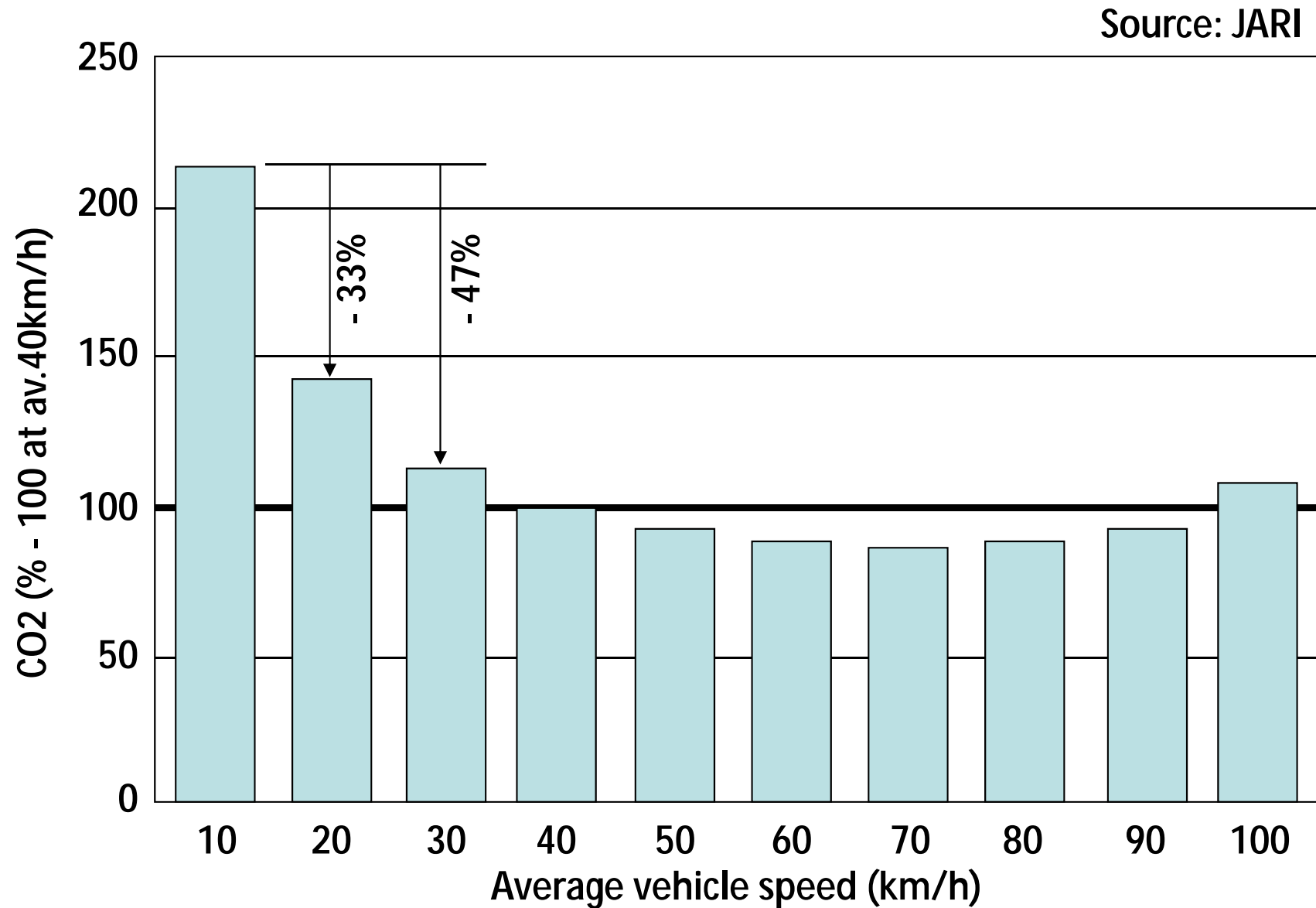


But.....

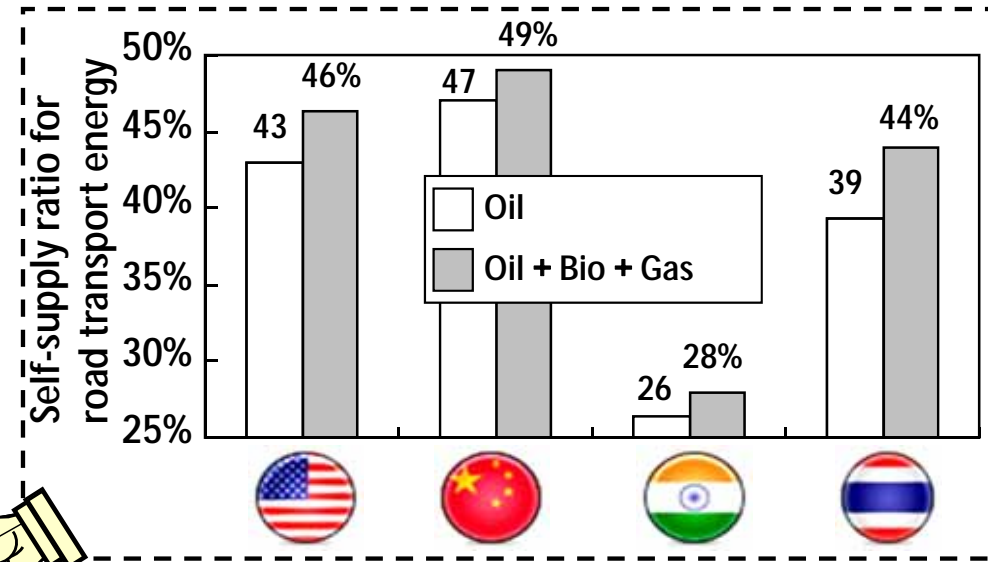
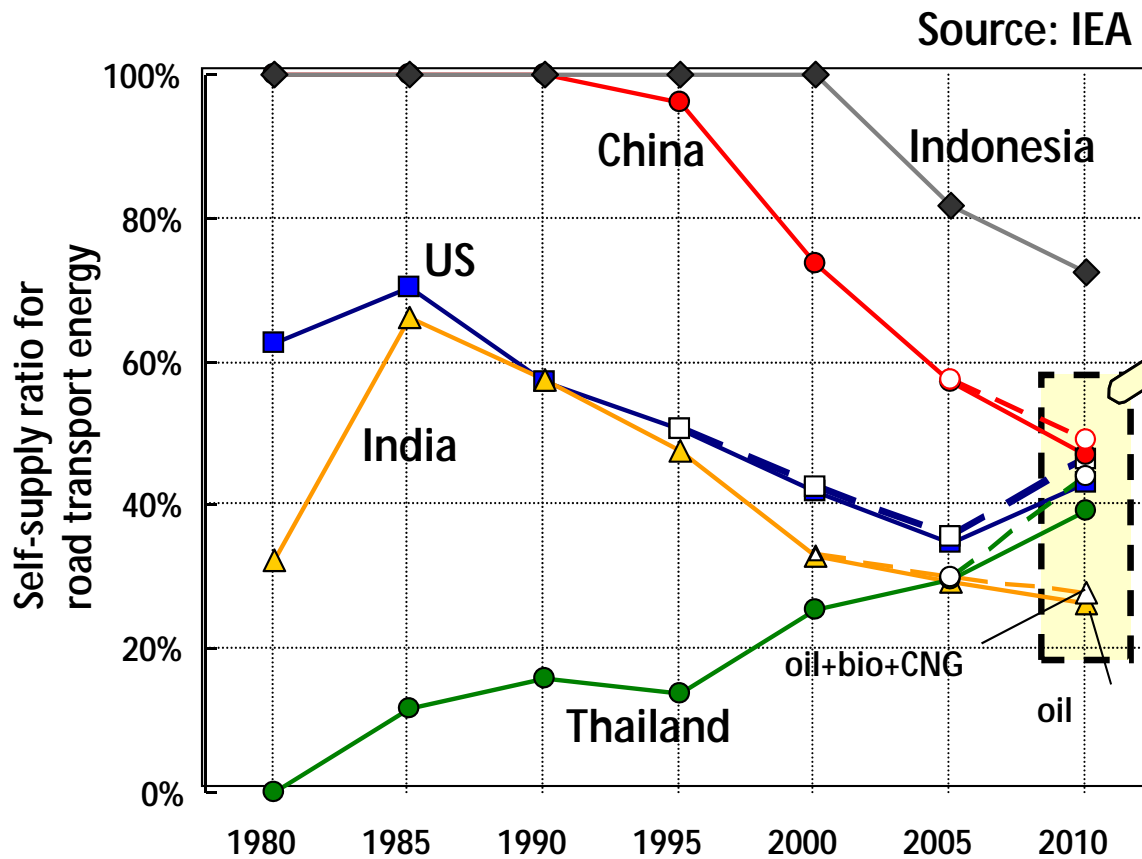


Smooth traffic flow maximizes potential of efficient cars

Expected impact by traffic flow improvement



Mitigating security concern also by alternative energies



Energy policy to be implemented to mitigate energy security concern

Example of 'Best energy mix' in Indonesia

1st Step

- To make energy model
- To identify the best policy option for road transport in Indonesia



Sep'13



Toyota

Mizuho Research
Institute

Make a basic model

Dec-'13?



Dewan Energi Nasional

UGM

Pertamina

Data collection and calculation

2nd Step (Draft)

- To apply model to other ASEAN countries
- To explore potential of 'ASEAN energy grid'

Discussion ongoing with
Petronas (Malaysia)



Raja Jalanan



Thank you



Rewarded with a smile

For limited distribution

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