Odisha Solar Conference 2014

NALCO playing lead in Renewable Energy

Need of Solar Power

- Conserve fossil fuels for our future generation, reduce green house gas emissions
- As a rough guide, one unit of electricity(KWh) production using following methods generates following amount of CO_2

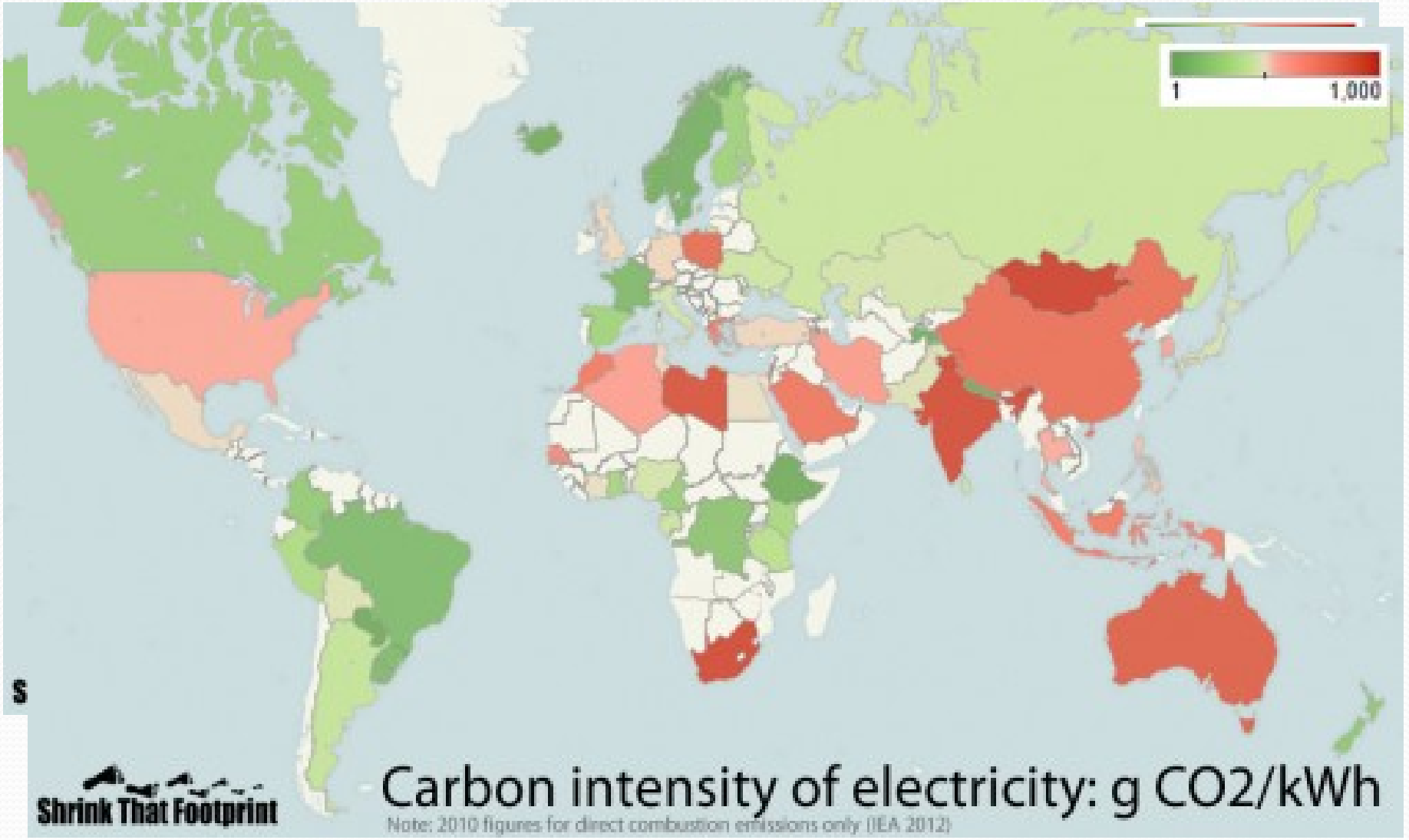
  Coal - 1,000 gm

  Oil - 800 gm

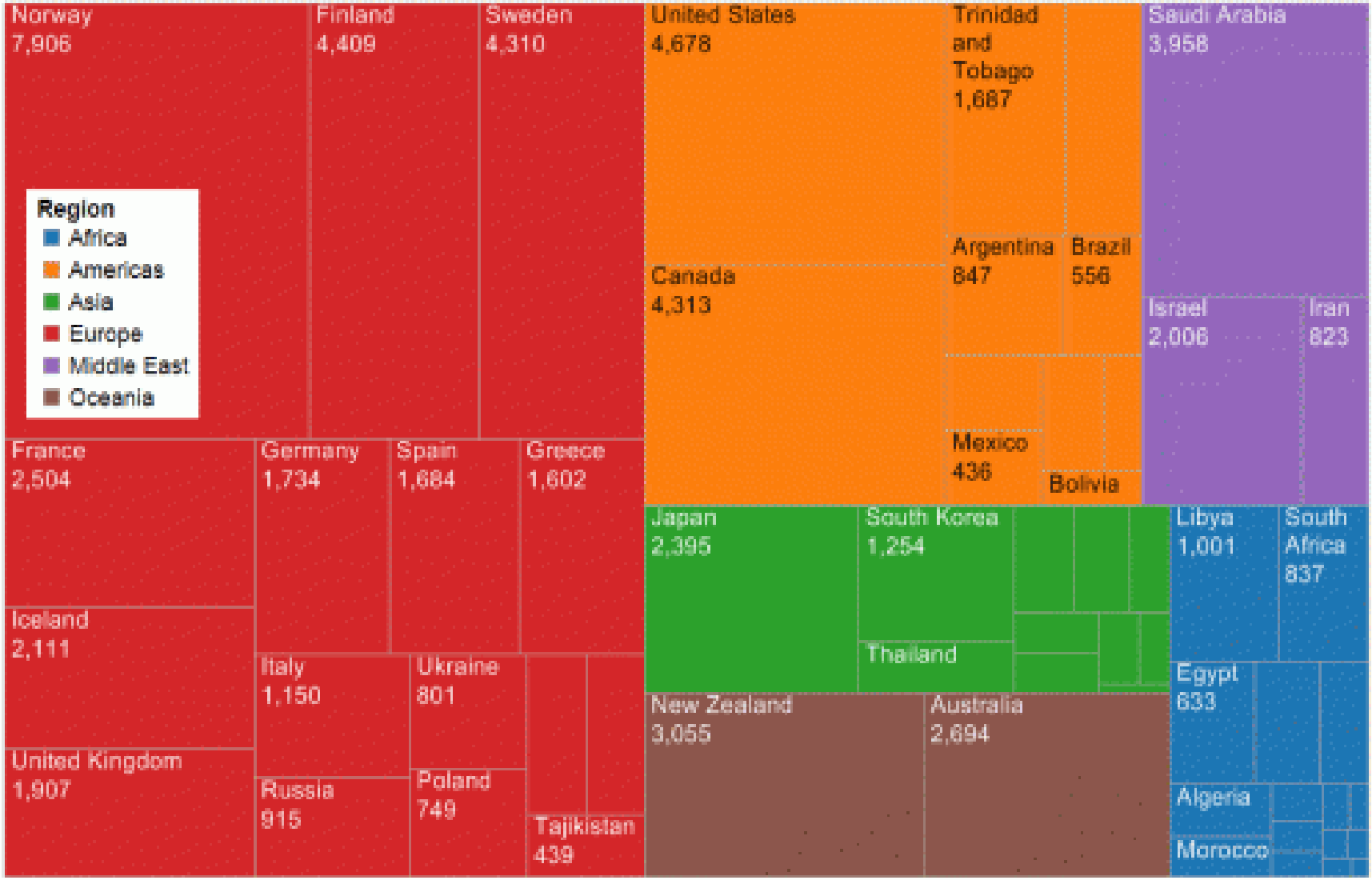
  Natural gas – 500 gm

  Nuclear, Hydro, Wind and Solar -Less than 50 gm

Need of Solar Power



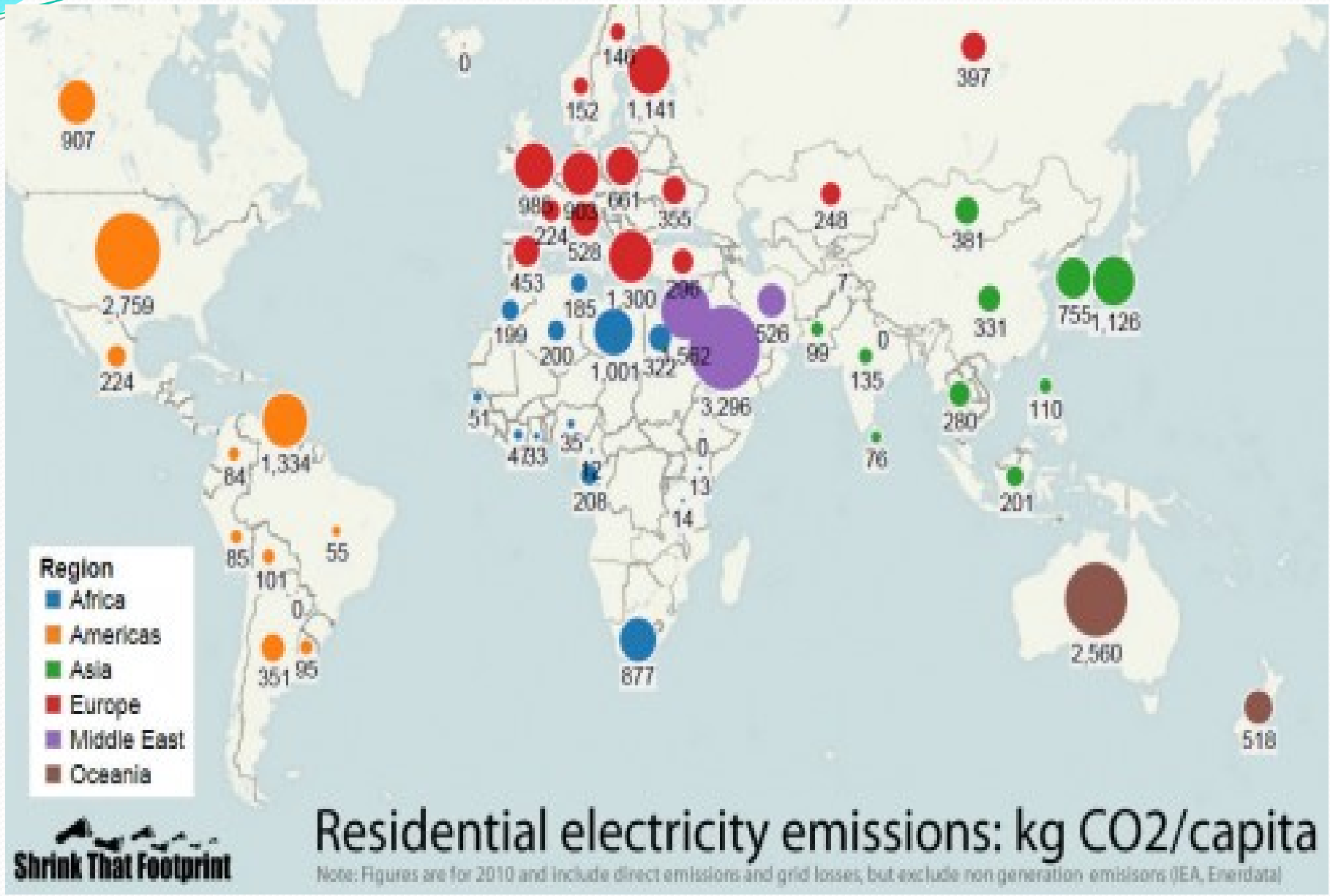
नालको NALCO



Shrink That Footprint

Residential Electricity Use: kWh/capita

Note: 2010 figures for total residential electricity use divided by population (Enerdata)


Region
Africa
Americas
Asia
Europe
Middle East
Oceania
907
2,759
224
1,334
84
85
101
55
0
351
95
0
152
1,141
140
988
903
861
355
224
528
453
185
1,300
199
200
1,001
322
562
526
3,296
51
493
35
208
0
13
14
877
397
248
381
7
99
0
135
76
331
755
1,126
280
110
201
2,560
518
Residential electricity emissions: kg CO2/capita
Note: Figures are for 2010 and include direct emissions and grid losses, but exclude non-generation emissions (IEA, Enerdata)
Shrink That Footprint

- Of the sixty or so countries analysed Saudi Arabia, the United States and Australia had by far the largest emissions at more than 2,500 kg per person.
- In stark contrast Iceland, Paraguay and Ethiopia each registered 0 kg, due to their incredibly low carbon power. Notably, Norway which uses almost double the residential electricity per capita as the US has emissions of just 152kg per person. In contrast India has more carbon intensive electricity than the US, but emits just 135kg per person due to such limited electricity use.
- It is also interesting that Chinese emissions are just 331 kg per person despite their high coal use

Solar potential : Odisha

- Average solar radiation 5 kwh/sq mtr/day
- Photovoltaic generation potential : 8000MW
- Solar Thermal potential : 2000 MW
- As per estimate in Solar Policy Resolution : Installation of 95 GW solar energy potential is available if 10% of wastelands are utilised.

National & State Solar Scenario

- Commissioned Solar Projects:2765 MW
- Maximum Capacity in Gujarat : 919 MW followed by Rajasthan i.e 727 MW
- Odisha : 29.5 MW

- National Target : 20 GW by 2022
- 15% of power consumption to be from Renewable sources by 2020

NALCO's Renewable Initiatives

- 50.4 MW wind power plant commissioned in Dec'12 at Gandikota, Andhra Pradesh
- 47.6 MW wind power plant commissioned in Jan'14 at Jaisalmer, Rajasthan
- A further 100 MW in Wind Power has been tendered
- 160 KW roof top Solar Plant commissioned at Corporate Office, Bhubaneswar in May'14
- 100 KW roof top in Nalco township buildings has been installed and is about to be commissioned.

Renewable energy generated

Description	Wind (mu)	Solar (kwh)
This fiscal till date	143	78,500
Cumulative till date	311	78,500

Further Solar Initiatives

- EOI for 5 MW roof top solar in the plant and office buildings of our S&P and M&R complex has been given to MNRE.
- Feasibility of setting up of about 2 MW (ground mounted + roof top) solar plant is being carried out for our NRTC complex, Bhubaneswar
- A 15-20MW scale ground mounted solar project envisaged in any solar potential State

NALCO RPO compliance 2013-14

- Meeting its RPO in Co-generation and was having excess of about 180 mu
- Meeting its RPO in Non-Solar and was having excess of 34 mu.
- Solar RPO requirement of 10.72 mu is being considered for adjustment through excess co-generation
- However NALCO is taking all steps to build a 15-20MW scale Solar Power Plant as its commitment for green initiative for which the process has started.

Commitment for the State

- We would like to develop the same in our mother state and request support from Govt of Odisha.
- We reiterate our commitment for all green initiatives and wish to continue as a leader in producing green energy.
- We would like to take it forward with few policy supports as enlisted:

Support Required from GoO

- The solar policy should be operationalised soon. The draft Solar policy 2013 is yet to be gazetted.
- Average Pooled Power Cost(APPC) rate need to be declared (for people who wish to avail REC benefits) and on regular basis.
- Declaring an assured rate of PPA for excess power fed to the grid from roof top solar plants. This can also be done for ground mounted solar plants so that people would be tempted to work out the feasibility and utilise their unused land.

Contd.

- Open access to be allowed inside the state giving priority for Solar Power and without any wheeling charges
- Fixing of bi-directional meters on top priority
- Identifying, acquiring, transferring/leasing solar potential land and facilitating connectivity for Captive/IPP solar plants
- Creation of Land bank specifically for Solar
- Developing solar Parks in fast track

Support Required from GoI

- Extend capital subsidy for residential installations
- Funding by MNRE to reputed R&D institutions for research in areas like electrolysers and hydrogen fuel cell technology for storage of solar power/wind power.
- Making installation of solar panels compulsory for new residential buildings,Malls,flats,factory sheds while extending building approvals.
- Utilize huge water bodies like dams,lakes and rivers for generating solar power by either floating or fixed type structures.

नालको NALCO

Thank You