Promoting Electric Mobility in Country Projects

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Easter Parade, New York
5th Avenue, 1900

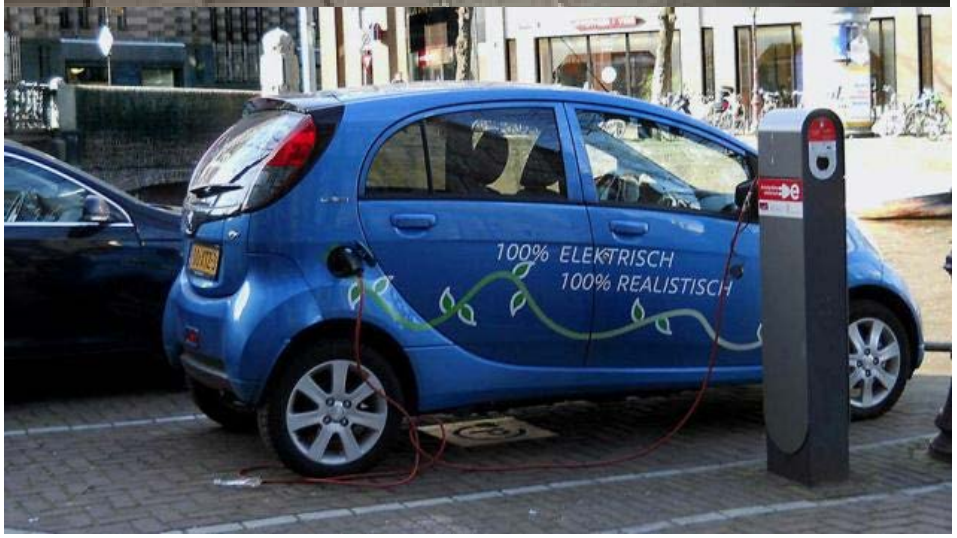

Easter Parade, New York
5th Avenue, 1913
In ten years the world shifted to fossil fuels cars…..

… will it shift to electric mobility in the coming 10 - 15 years?

Many agree the world is going to shift to zero/ electric mobility….

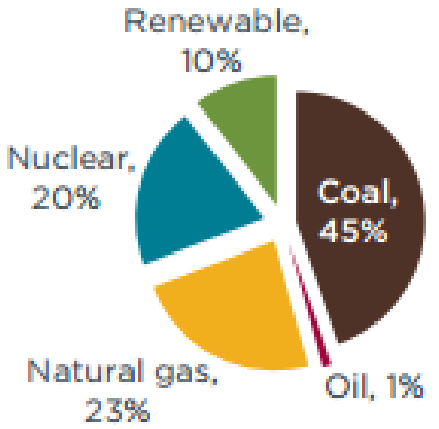
….but when, where and how, they don't agree….

…neither where the electricity will come from …



Benefits electric vehicles

- … on 100% coal:
  - Very large for air pollution
  - None (almost) for CO2 emissions
- …on 100% renewables:
  - Massive for air pollution
  - Massive for CO2 emissions



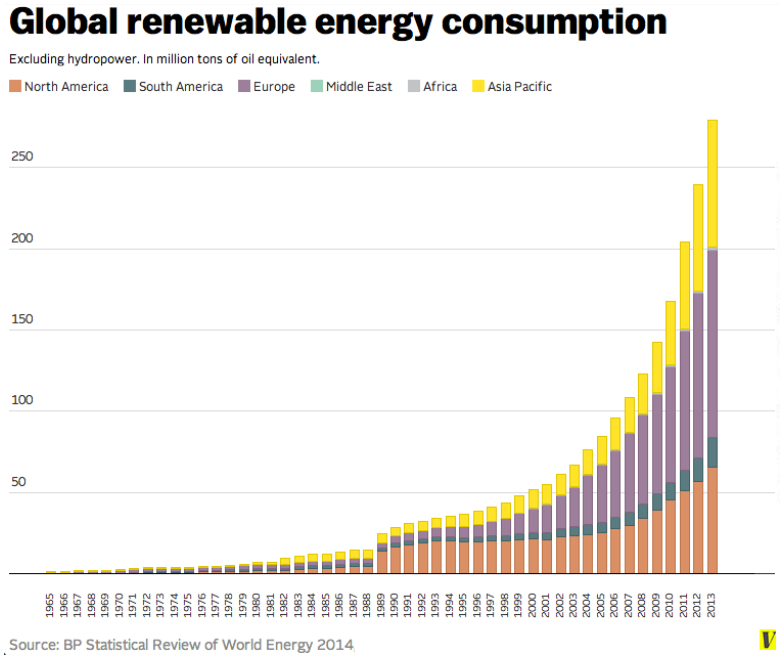
233 gCO_2/mile
Electric vehicle, U.S.. average

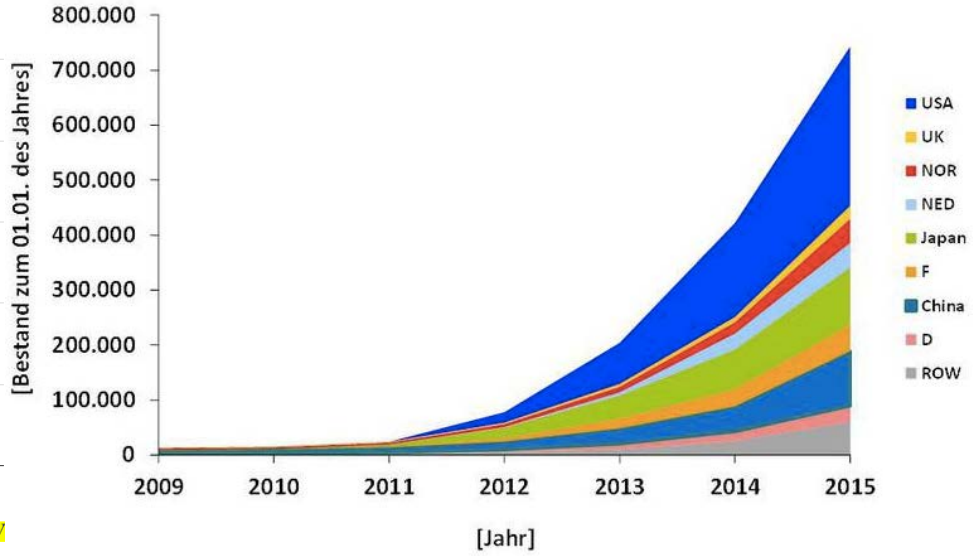
Situation Today

- Today we have about 1 million EVs (incl PHEVs)
- Paris E-mobility declaration (2015): 400 million EVs, of which 100 million are cars, by 2030 (which is still ~5% of fleet only…)
- So going from 1 million to 100 million Electric cars in next 15 years? How?
- Would need global shift, in all regions
- Climate: to reach 2C we need:
  - Improve fuel economy
  - Introduce ZEVs
  - (plus more)

Renewables and EV introduction

Renewables trends – followed by electric vehicles? How to link better?

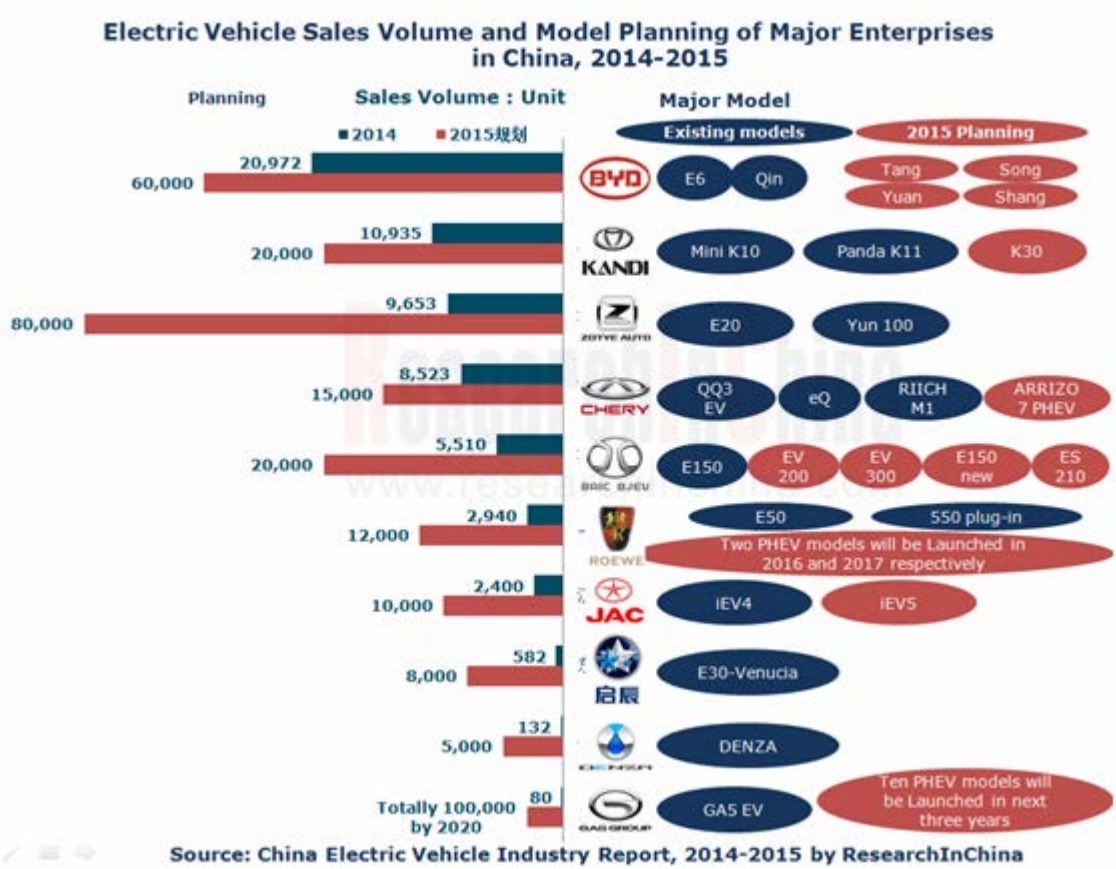




Some examples

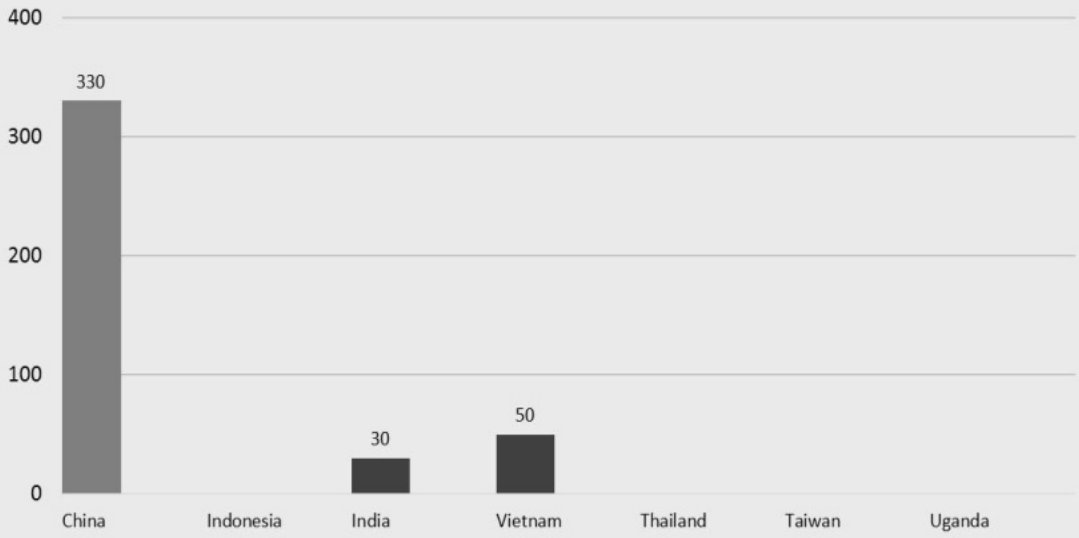
China – 2-wheelers and cars

- Electric 2-wheelers have increased to about 300 million units
- For passenger cars, sales reached about 75,000 in 2014



Electric Two-wheelers Fleet

Extrapolated **Electric** Two-wheelers Fleet in 2020 [million units]



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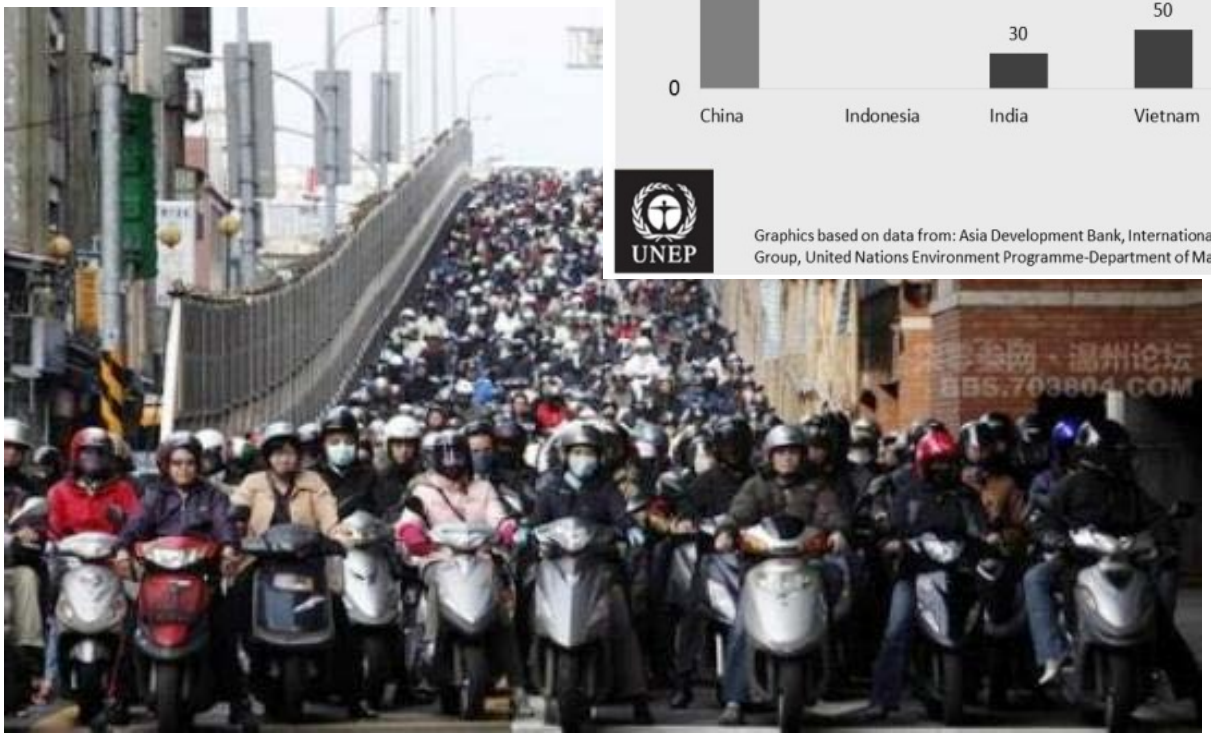
Graphics based on data from: Asia Development Bank, International Council of Clean Transport (Meszler, 2007), International Nickel Study Group, United Nations Environment Programme-Department of Management Engineering



Thailand 2016 - new tax structure

Categories Of Vehicle	Tax Structure in Present				Tax Structure in Future			
	Engine Capacity (Horse Power)	Tax Rate (%)			CO_2	Tax Rate (%)		
		E10	E20	E85		E10/E20	E85/NGV	Hybrid
Passenger Vehicles - Passenger Vehicles and Vans less than 10 seats	d2,000 CC 2,001-2,500 CC 2,501-3,000 CC >3,000 CC (ft‡ 220HP)	30 35 40 50	25 30 35 50	22* 27 32 50	d 100 g/km 101-150g/km 151-200 g/km >200 g/km >3,000 CC	} 30* 35 40 50	} 25 30 35 50	10 20 25 30 50
PPV / DC /Space Cab/Pick Up	d3,250 CC >3,250 CC	20/12/ - /3,18 50			d 200 g/km >200 g/km >3,250 CC	25*/12/5/3,18 30/15/7/5,18 50		
Eco Car (Benzine/Diesel) / E85	1,300/1,400 CC	17			d100 g/km 101-120 g/km	14*/12 17/17		
Electric Vehicle /Fuel Cell/ Hybrid	≤ 3,000 CC >3,000 CC	10 10 50			>3,000 CC	10 ** 50		
NGV-OEM	≤ 3,000 CC >3,000 CC	20 50			>3,000 CC	** 50		

Remarks * : Assign safety standard for Active Safety (ABS+ESC) for Passenger Vehicles and Vans less than 10 seats must obtain $CO_2 \leq 150$ g/km / PPV must obtain $CO_2 \leq 200$ g/km / Eco Car must obtain $CO_2 \leq 100$ g/km

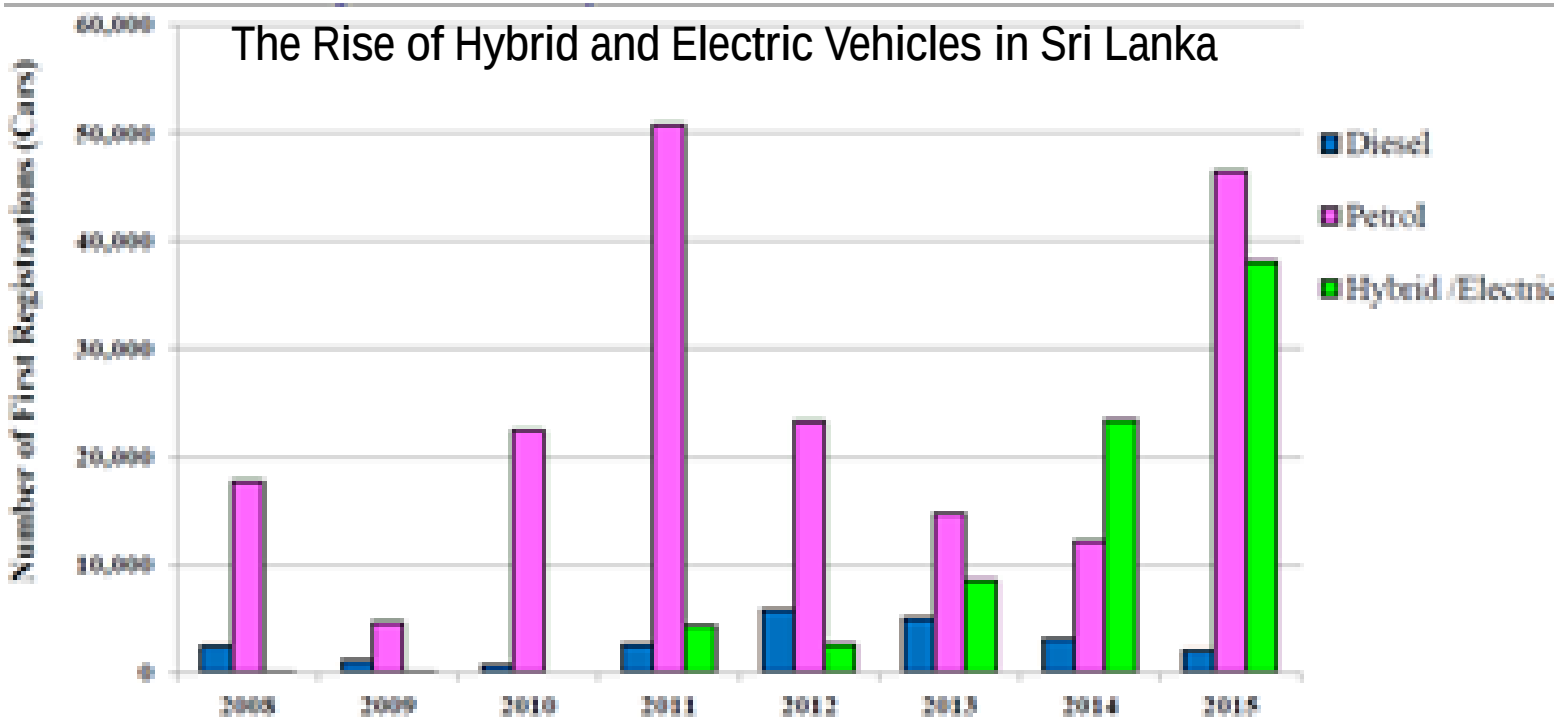
** Depend on CO_2 emission

* less than 1,780 CC but not over 2,000 CC

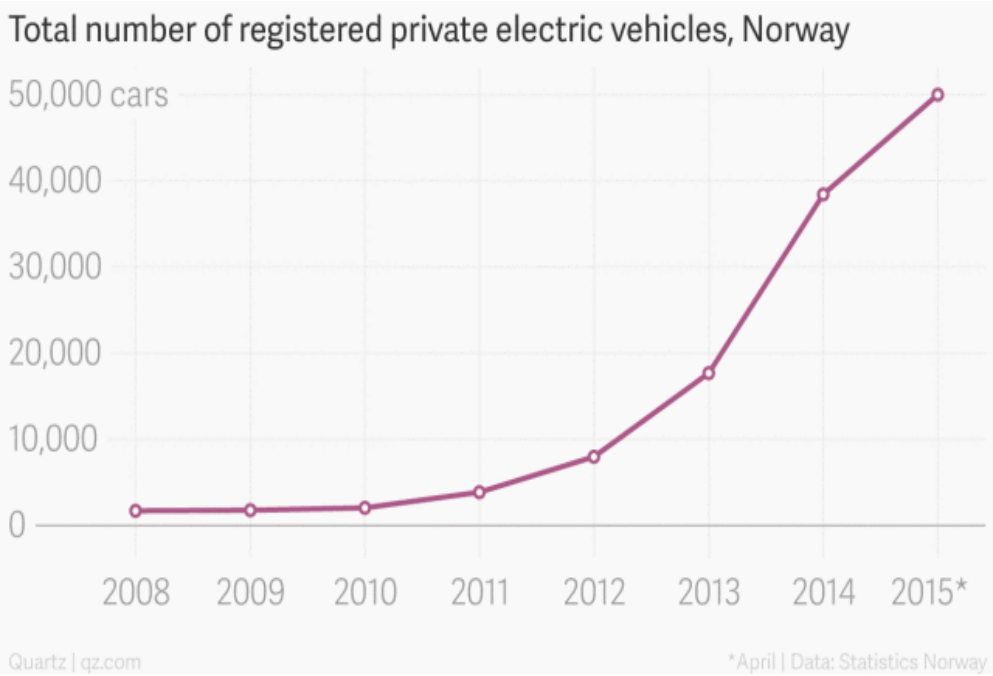
Sri Lanka - favoring electric vehicles

	Present							Cumulative	
	CD	PAL	Excise	VAT	NBT	Cess	Total	Excise	Total
Petrol Car									
Golf Cars	25%	5%	45%	12%	2%	0%	124%	100%	115%
Less than 1,000 CC	25%	5%	92%	12%	2%	0%	202%	150%	173%
1,000 - 1,599 cc	25%	5%	92%	12%	2%	0%	202%	150%	173%
1,600 cc - 1,999 cc	25%	5%	92%	12%	2%	0%	202%	150%	173%
2,000 cc - 2,999cc	25%	5%	122%	12%	2%	0%	251%	200%	230%
Exceeding 3,000 cc	25%	5%	137%	12%	2%	0%	276%	220%	253%
Diesel - Car									
Less than 1,600 CC	25%	5%	122%	12%	2%	0%	251%	200%	230%
1,600 CC - 2,000 CC	25%	5%	137%	12%	2%	0%	276%	220%	253%
2,000 CC - 2,500 CC	25%	5%	152%	12%	2%	0%	301%	240%	276%
Exceeding 2,500 CC	25%	5%	183%	12%	2%	0%	352%	300%	345%
Hybrid Petrol Car									
Less than 1,000 CC	15%	5%	14%	12%	2%	0%	60%	50%	58%
1,000 - 1,599 CC	15%	5%	14%	12%	2%	0%	59.75%	50%	57.50%
1,600 cc - 1,999 cc	15%	5%	14%	12%	2%	0%	60%	50%	58%
2,000 cc - 2,999cc	15%	5%	40%	12%	2%	0%	100%	85%	98%
Exceeding 3,000 cc	15%	5%	57%	12%	2%	0%	126%	100%	115%
Hybrid Diesel Car									
Less than 1,600 CC	15%	5%	21%	12%	2%	0%	71%	60%	69%
1,600 CC - 2,000 CC	15%	5%	21%	12%	2%	0%	71%	60%	69%
2,000 CC - 2,500 CC	15%	5%	40%	12%	2%	0%	100%	85%	98%
Exceeding 2,500 CC	15%	5%	57%	12%	2%	0%	126%	100%	115%
Electric Car									
Car - Electric	15%	5%	0%	12%	2%	0%	34%	2.5%	25%

Sri Lanka global leader on hybrid electric vehicles – about half of all vehicles added are hybrid

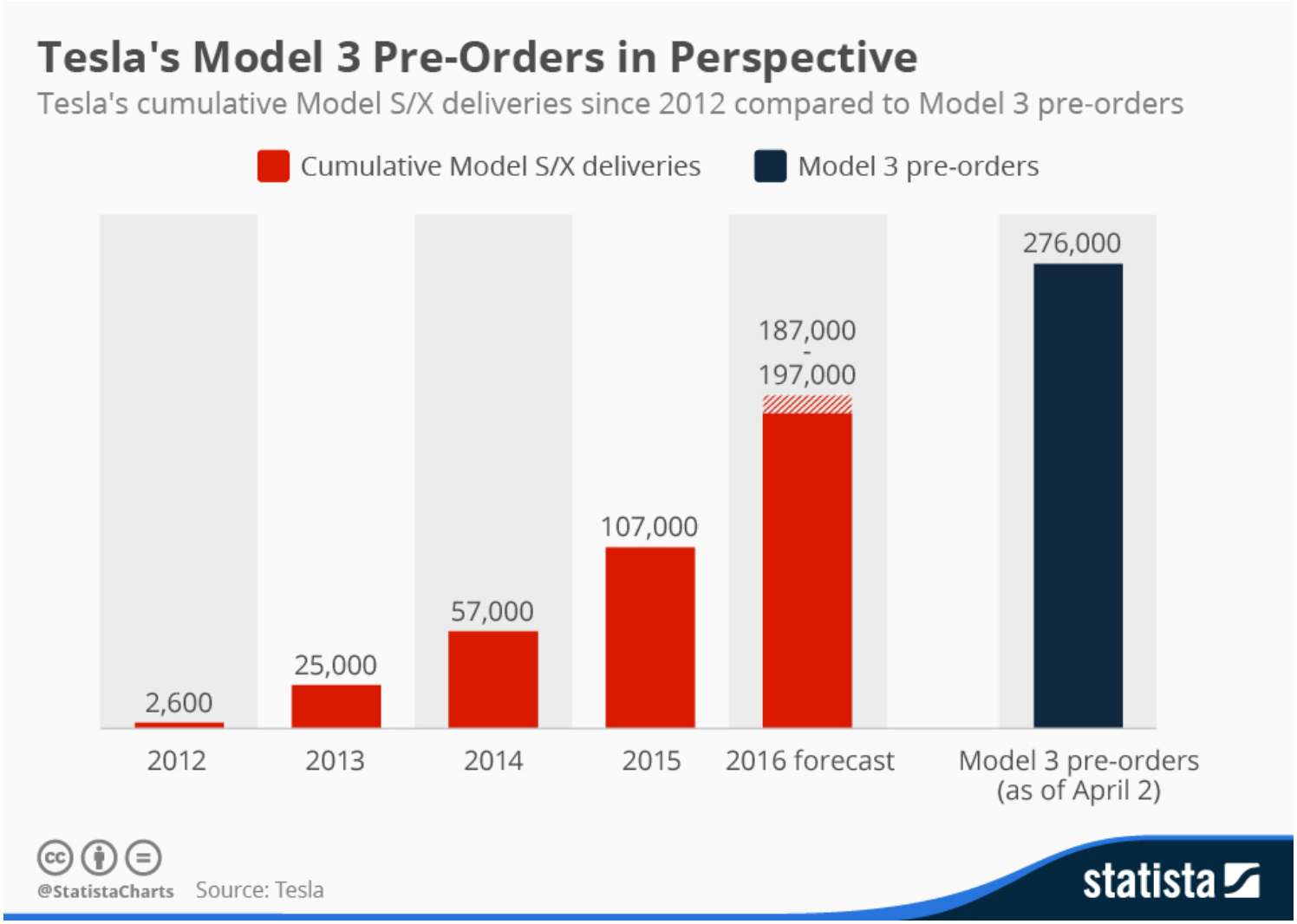


Norway - Electric Car Sales Grow 71% In 2015



- Today one-third of new cars electric
- Plans are by 2025 to have 100 percent of new passenger cars, buses and light commercial vehicles be zero emissions
- Up to 16,910 Euro tax breaks on purchase and recurring exemptions

consumer interest



national roadmaps to promote electric mobility

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Only electric cars should be sold in Netherlands from 2025

Dai

Sea

India Aims to Become 100 Percent Electric Vehicle Nation by 2030: Power Minister

Press Trust of India , 26 March 2016

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The government is working on a scheme to provide electric cars on zero down payment for which

Electromobility in Germany:
Vision 2020 and Beyond

UNEP's new Electric Mobility Programme

- To provide on the ground support in developing pilots, policies and programs to promote the introduction of EVs;

- With a focus on middle and low income countries, especially emerging economies

- Four works streams:
  - ✓ Introducing electric 2&3 wheelers
  - ✓ Introducing electric bus fleets
  - ✓ Developing national policies for electric cars
  - ✓ Regional replication and outreach

- 1) **Introducing electric 2&3 wheelers**
  - ✓ 6 country projects in Southeast Asia (Philippines, Viet Nam, Thailand) and Eastern Africa (Kenya, Uganda and Ethiopia), plus Morocco
- 2) **Introducing electric bus fleets**
  - ✓ supporting 20 cities in Asia, Latin America and Africa to introduce clean bus fleets – electric busses included
- 3) **Developing national policies for electric cars**
  - ✓ 27 ongoing national projects globally (an additional 33 by 2017) working on national automotive fuel economy policies, to include electric vehicles components where relevant
- 4) **Regional replication and outreach**
  - ✓ regional opportunities and barriers reports (Africa & LAC ongoing, Asia to start)
  - ✓ outreach and communication activities, replication of best practices at regional level, etc.

Integrating promotion of EVs in GFEI projects

- Labeling
- Fiscal incentives – fee bates, taxation
- Standards and national programs
- Organize task forces
- Background studies
- Awareness & communication
- Import

- Promotion of local manufacturing
- Infrastructure

ASEAN Examples – EV measures

- Fiscal incentives – Indonesia, Malaysia, Singapore, Thailand, Philippines
- Infrastructure – Indonesia, Singapore
- Pilots – Indonesia, Malaysia, Singapore, Philippines
- Manufacturing – Malaysia, Cambodia

Proposals for GFEI

- Integrate EV component in FE national policy development
- Link to renewable energy issue
- Possible links to national E-mob programs
- Many key issues – many specific to local circumstances
- Need for development of tools and approaches
- Collect best practices and disseminate
- GFEI partners among leaders at global, regional and national level
- Support needed from UNEP & GFEI partners

Thank you for your attention

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