

Powering the Future

2017



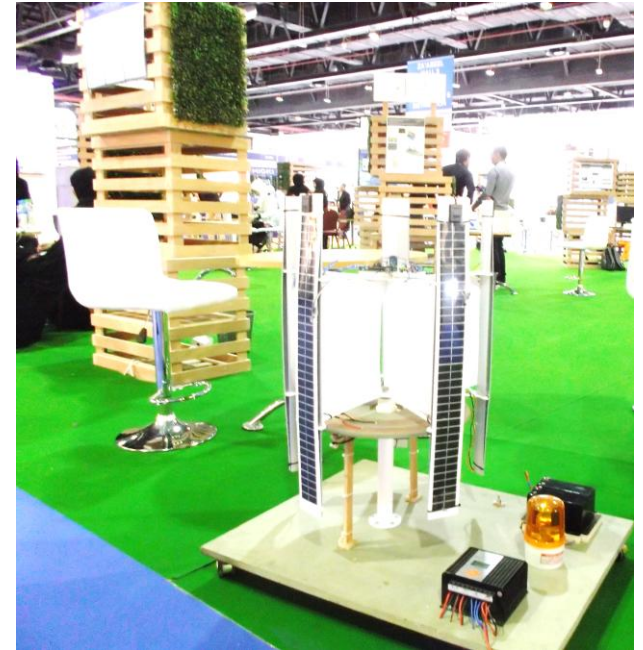
A LOOK AT THE FUTURE



ARE THE DAYS OF MEGA POWER PROJECTS NUMBERED?

Utilities have substantial \$\$\$
investments to recover so wont
happen overnight

but not needed for the future



FUTURE WILL BE SUSTAINABLE RENEWABLE ENERGY

- 1) Solar
- 2) Wind
- 3) Bio Mass
- 4) Waste to Energy
- 5) Mini Hydro
- 6) Hydro
- 7) Ocean Wave
- 8) Nuclear
- 9) Geothermal



DISTRIBUTED ENERGY REPLACING UTILITY SCALE ENERGY

Minimal Transmission Losses

Fast Track – Conception to Generation

No need to mobilise \$ Billions

Environmentally friendly or at least - Neutral

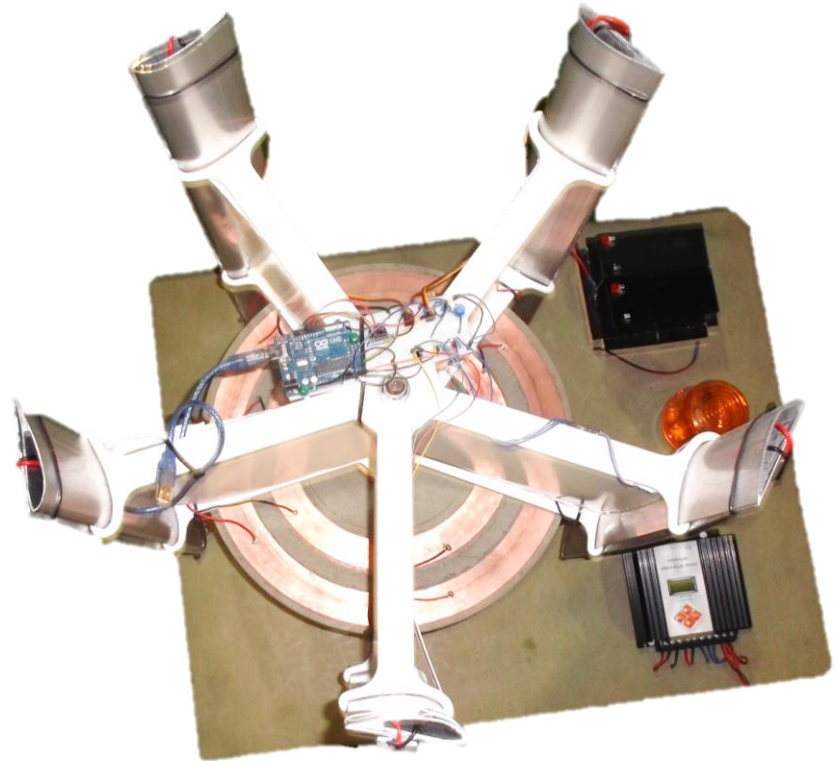


BASE LOAD GENERATION STILL NEEDED

Hydro (+storage – fast start)

Ocean Waves 24/7

Nuclear??



RENEWABLES

Flexible, Affordable, Environmental;
Waiting for legislation to catch up



STORAGE WILL CHANGE EVERYTHING

24/7 Availability – Flexibility
to match Supply with
Demand



POWER WALLS / DOMESTIC STORAGE

Available now - US\$10,000 +/-
And falling

Hybrid / Electric Cars
Battery Life – improving
Weight & Cost – reducing
Technology - advancing



INTERNET OF THINGS

Impacting Now

Home Controls

Autonomous Cars

Security Tracking

Location Tracking



SOME INSURANCE IMPLICATIONS

Electric Cars – Silent

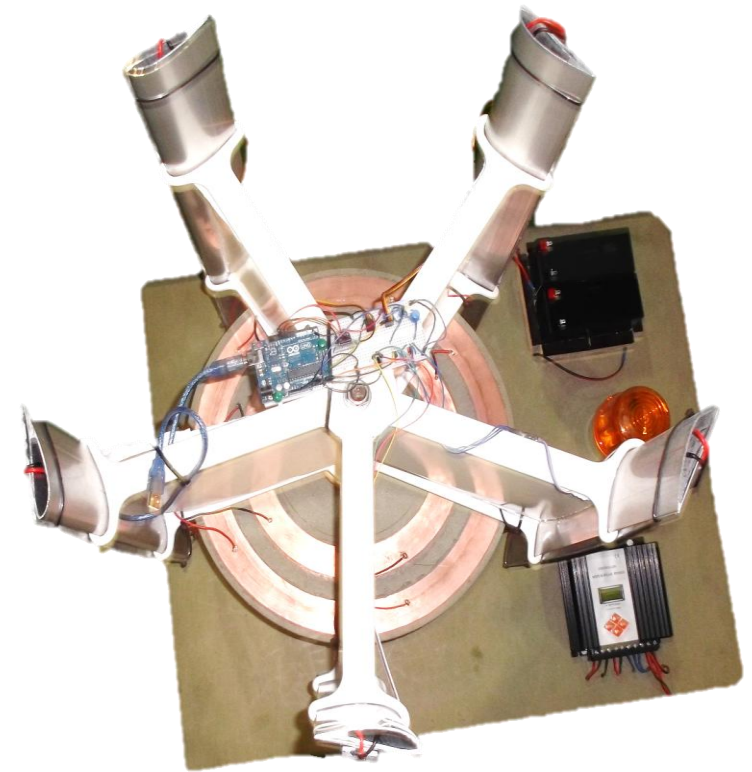
Pedestrian Safety – 5 Senses

Autonomous vehicles

Centralised Control Failure? / Hack

Multiple incidents around the World from
single failure

Global / Regional Control



HOUSES OF THE FUTURE

Integrated solar generation and storage designed

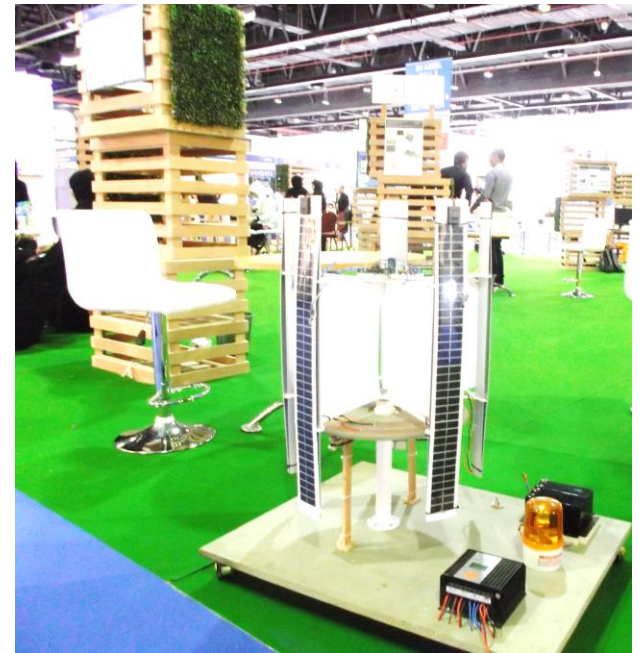
Rooftop / Solar panels and wind

Solar film

Feeding the grid

Powering the Autonomous Car

Wireless Power - no cables or plug sockets



CARS OF THE FUTURE

POWER GENERATION

FROM SOLAR FILMS

CHARGE AS YOU DRIVE

COOL AS YOU PARK



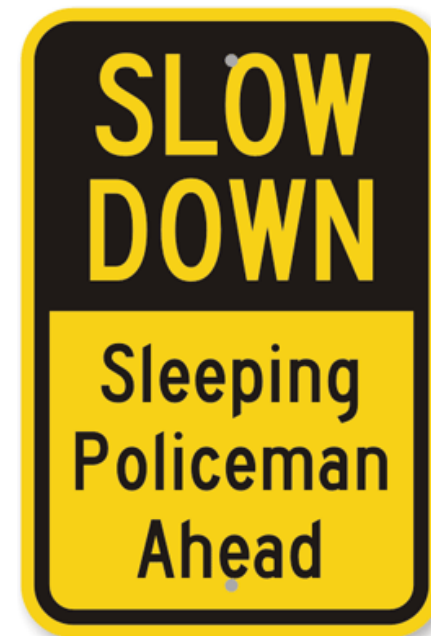
SHIFT IN RISK PROFILES

Who drives [flies] the car?

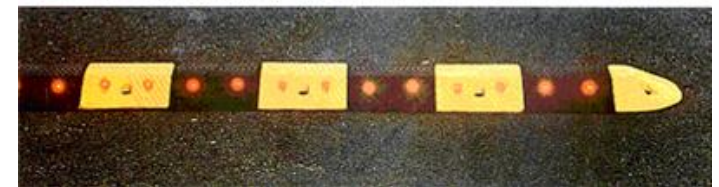
Domestic appliances – is it still your washing machine?

Fuelled via wireless power – no wires, cables, plug sockets needed

Still a “flaming chip pan” exposure?? Or will the IOT eliminate that as well?



Hybrid Solar / Wind already operating
Street lighting powered by “Sleeping
Policemen”
Weight of vehicles
“Plastic” Roads



- ✓ NEW CHALLENGES
- ✓ NEW RISKS
- ✓ NEW RATING MODELS
- ✓ NEW THINKING

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