

Will Global Warming get to us before the Solutions for global warming take us out?

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Or will technical innovation convergence accidentally save us?



The Hero?

**Is electricity the Energy Source that is
expected to save us?**

Does it become the source of safety?

Electrical safety

Or

The safety of the application of electricity

**Imagine all of your heat pumps, fridges, and
freezers full of either highly flammable or toxic
refrigerants**

***The slightest leak will do more than rearrange
the roses in your front garden***

**Or, your pockets full of mobile equipment
powered by highly unstable LiPo batteries so
dangerous you can't carry them on an aircraft**

**The same unstable LiPo batteries storing
enough energy on your lounge wall to power
your house for a day or two**

**To say nothing of the Hoverboard and model
helicopter in the garage**

***Not so much of a worry because your Electric
Cars aren't full of petrol***

Although they do have LiPo batteries of course

**Where is the main switch to turn off your
house in an emergency when:**

**The PV enlivens the house backwards from the
garden shed**

**Your Electric Vehicle is capable of supplying power
backwards from the garage submain**

and

**The lounge wall batteries are coupled up via the
oven's 6 mm² subcircuit**

Or is the main switch actually wired up to switch off the house while leaving the PV coupled to the local network?

If so, where is the Electric Vehicle coupled in?

Or is the house configured to never export power because the buyback price is too low?

And of course the anti-islanding requirements mean that the PV systems at the local civil defence centre at the school can't generate any power in a disaster because the grid is dead!

We got that right!

One advantage of PV systems is that they are unlikely to cause a fire while you are asleep at night

At least we got that safety feature sorted out early

But as the Australian's are finding out, DC isolation switches using four poles wired in series do have some limitations if they are cheap quality production copies

Certainly PV and EVs combine well to deal with network limitations

They can move electricity like a TARDIS in both space and time!

In fact when you go shopping for the ingredients to cook a cake you can expect to purchase the electricity to cook it at the same time and bring them all back home in your car

Will all electrical work be done at night

If live work is banned and we have no way of turning off the PV systems during the day electricians and line mechanics will become *creatures of the night!*

The price of carrots will soar!

How about voltage Regulation?

If each house has its own inverters who cares about the voltage coming in from the network

Or going out for that matter?

Is the incoming power used just to top up the batteries?

And where does the “MEN” come from?

When the majority of power is “generated” within the installation, how can the MEN be based on the connected network?

Already the safety of Electric Vehicle charging is being challenged if an MEN system is used for the charging supply. International recommendations warn against supplying EVs from TNC-S systems!

If the neutral falls off, the whole vehicle could become alive and the RCDs not function!

So is MEN dead?

If so, do we adopt the TT system and does this require our RCDs to be voltage independent?

Or does the presence of DC on the AC system require that we use special RCDs in the future?

Or will there be enough DC wandering around on a sunny day to take out the supply transformers?

Do we Regulate the embedded networks?

If so, for what?

Voltage ?

Frequency ??

MEN / TT ??

Given all of this, we have a trend to provide medical treatment, relying on 10mA sensitive, high speed RCDs in private homes and retirement facilities.

Can this be made safe?

Do autonomous cars become baby sitting machines?

Will networks themselves become the mechanism by which safety problems will be transferred between consumers?

How old is Electricity

**It's not all that long ago that Wellington was
supplied with 110 volts!**

**And DC was reticulated for lifts
and horse drawn trams !**

ARE WE GOING BACKWARDS?

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before the Solutions for
global warming take us out?**

**I have my money on the solutions
being more of a threat**

**They are being driven at a dangerously
high speed**

