



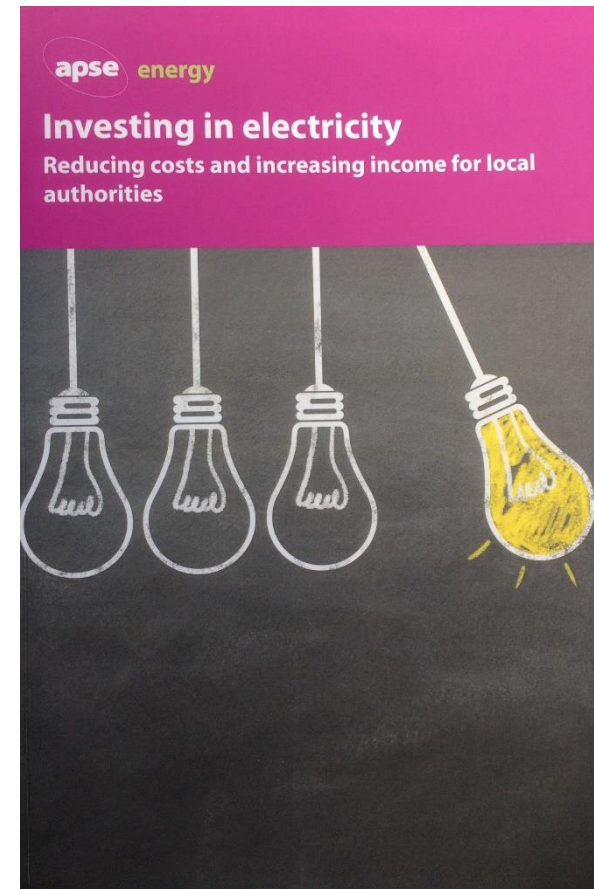
# **Income from Energy: Options for your council to consider**

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# Investing in electricity



- I would first like to draw your attention to this APSE Energy Publication
- The publication covers all aspects of electricity and market opportunities
- What I would say it is a good worthwhile read!





# LA Energy Companies

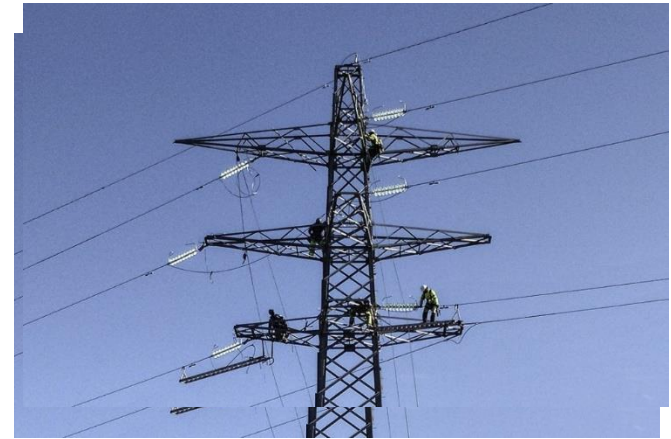
- We are going back to local distributed electricity in the UK
- Government want more competition in the energy market
- Big 6 now have over 30 small competitors
- LA's were the suppliers in olden days owning the town power stations
- Nothing to stop an LA being an Energy Company again





# Nottingham

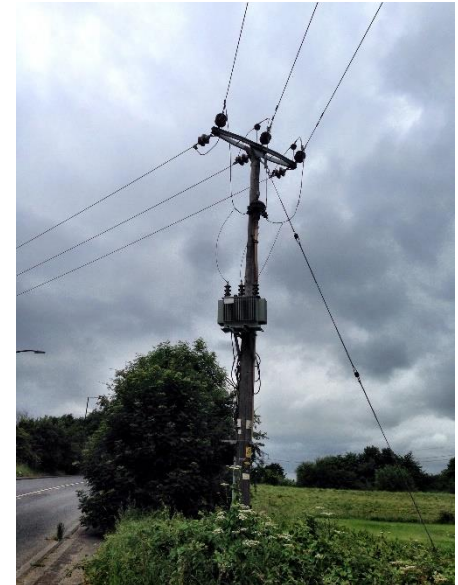
- Robin Hood Energy have proved it can be done
- However process can be painfully slow and expensive
- A quick way forward would be to do a deal with RHE and then “White Label” in your area.
- Remember LA’s are much more trusted than energy suppliers.





# A word of caution!

- A few of the “new” energy companies have already folded
- Can be caught out by sudden fluctuating energy prices
- Big 6 can weather a storm (at present!)
- Essential you ensure that it is right for you
- Seek advice on your specific situation.





# Today's Energy Market

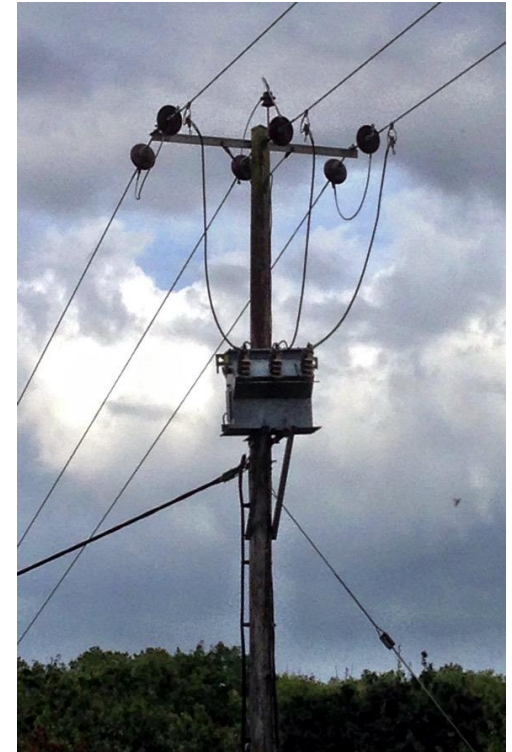
- Problem's are brewing for Government
- Shortage of electricity
- France supplying nil at present
- Nuclear costly and 10 years away
- Gas supply needed for heating but now relies on imports (fuel security a major issue)
- Wind and Solar work and are becoming the most cost effective





# Storage

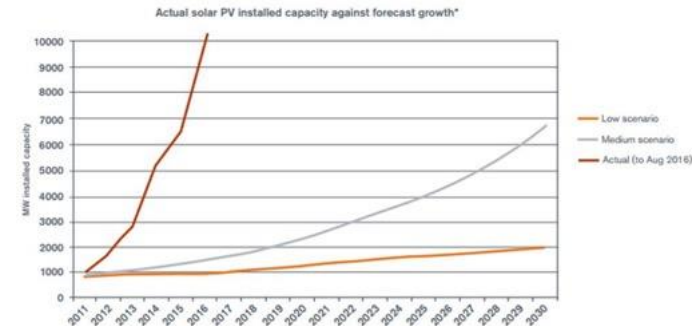
- Wind and Solar with Storage overcomes the intermittency problem
- Storage allows electricity to be moved to peak time demand (Red Zone) – savings are huge for those on half hour tariffs
- Because of capacity shortages Red Zone pricing is rising rapidly
- Storage can also help solve many of the grid problems



# Which Storage Technology



- Lithium Ion batteries developed by the electronics industry and now being developed further for the EV market.
- Storage was thought to be 20 years away – it is here now
- Mass production drove down Solar prices
- Battery prices are reducing rapidly – 80% between 2010 to 2020.

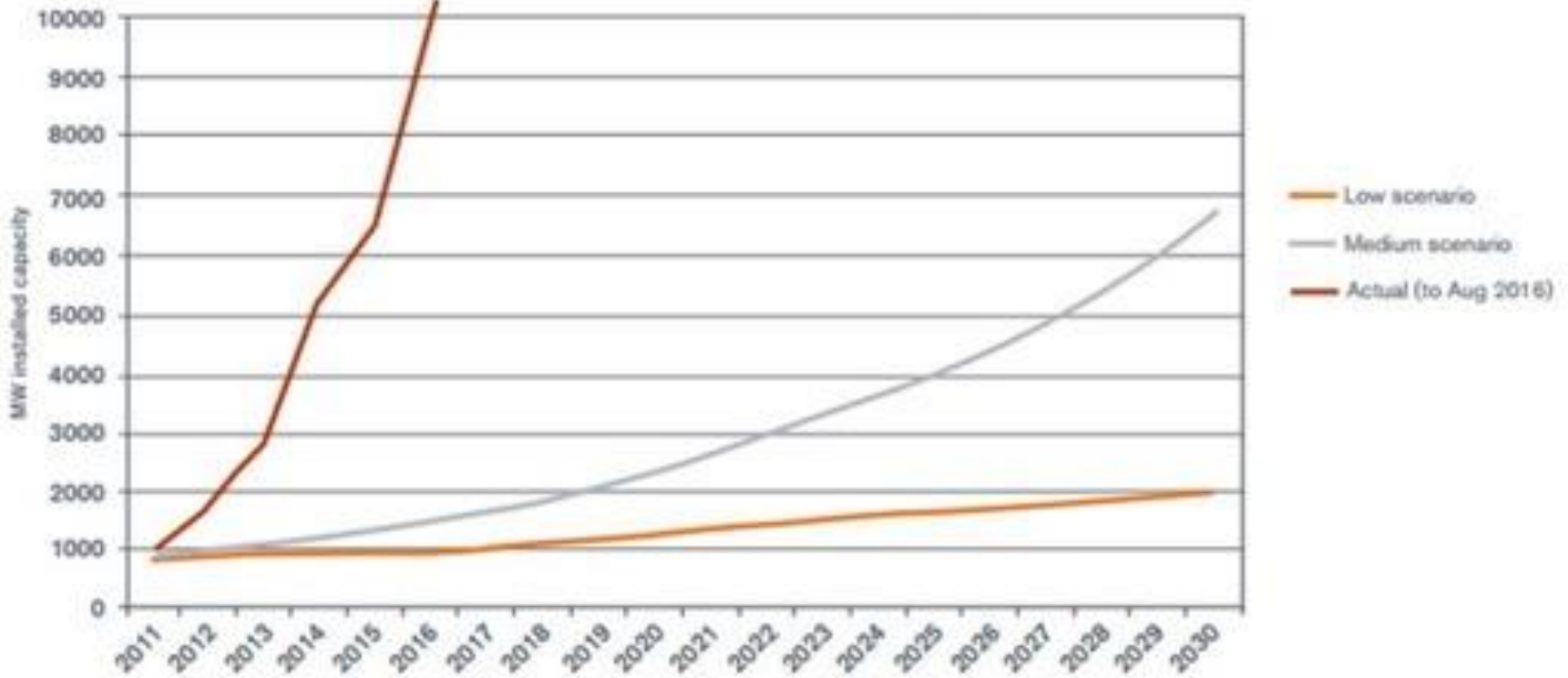




# 12GW of Solar



Actual solar PV installed capacity against forecast growth\*





# Technology advances

- Nissan introduced the Leaf with 85 mile range, battery technology improvements, a Leaf now has 155 mile and soon to be 340 mile range
- Took 8 hours to charge
- Created the term range anxiety
- And it was thought on street charging would be required and a complete new infrastructure would be required
- EV growth will be rapid (Apple!!)





# EV Charging

- Fast chargers can now charge EV's in 30 minutes and 15 minute are in development
- Grid cannot handle large numbers of fast chargers and additional storage is being installed
- EV's will soon have 450mile range
- Motorway Service areas are becoming the EV charging centres
- Range anxiety is dead!



# This creates opportunities



- Car parks and Park and Rides will also be charging centres for EV's
- Of course clean cars need clean energy
- Solar canopies are now being developed to provide direct electricity charging for EV's
- This provides other benefits to both the grid and UK electricity supply and opportunities for the LA



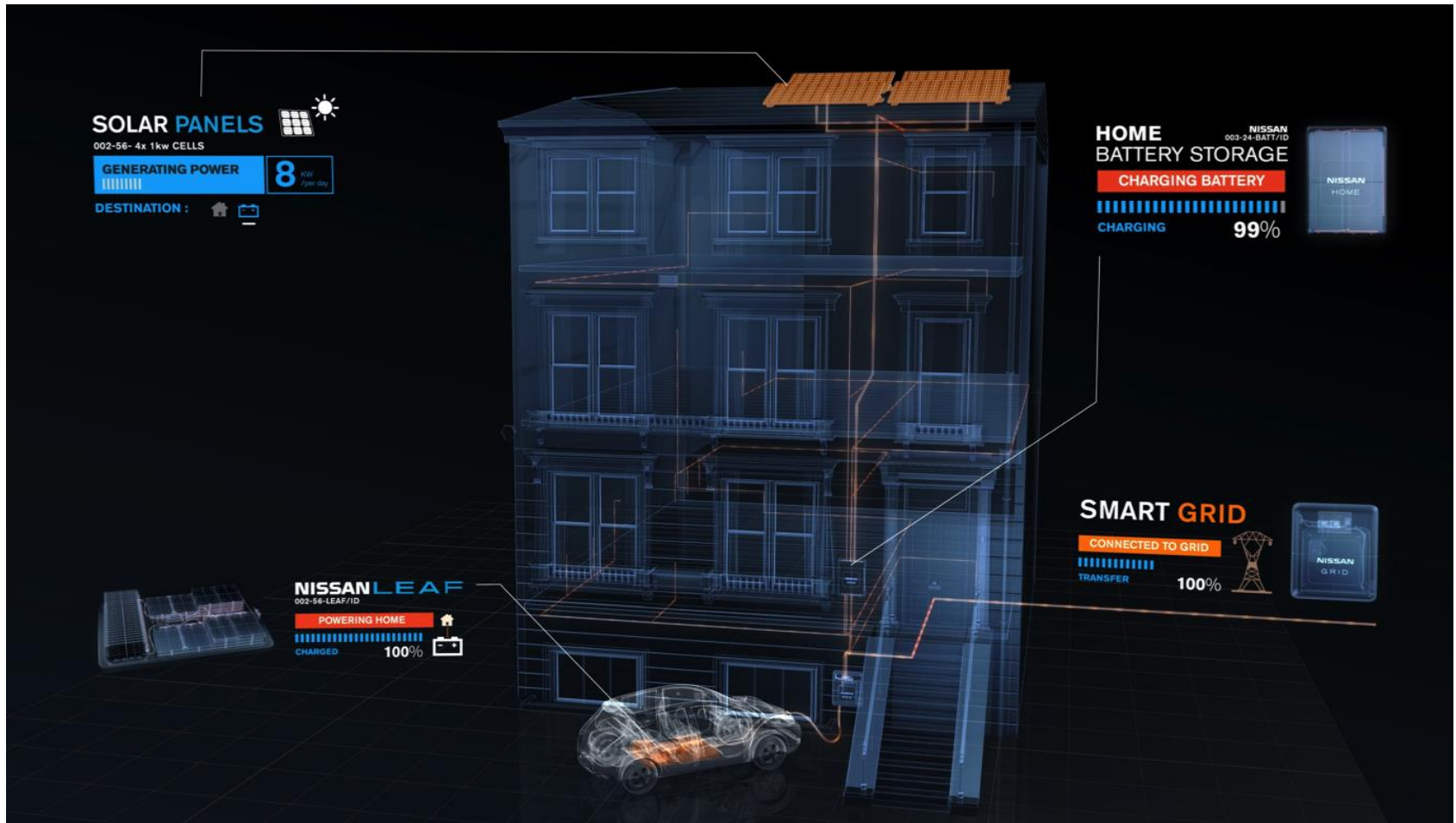
# Solar installations

- Existing or new Solar installations, both on houses and buildings, can now have batteries added and avoid export of spare electricity yet still be paid an export tariff
- The electricity stored is used in the evening avoided expensive grid electricity
- This also helps grid by reducing demand at peak times





# Smart systems





# Transport is changing



- City transport, buses, delivery vehicles can now be powered by electricity
- It was thought large vehicles would be too heavy to run on electric
- This produces no emissions and improves air quality
- LA's can encourage or force this change to happen



# Hydrogen

- It was thought that hydrogen fuel cells would power vehicles after fossil fuels run scarce
- Many towns are using hydrogen buses which are refueled at the depot
- It is likely that Electric buses will be lower cost as the batteries will be the same as used in EV's and buildings





# New smart buildings

- Near Zero carbon buildings are now happening
- Energy efficiency, LED lighting, solar roofs, storage, smart controls and linked to EV's can dramatically reduce electricity requirements from the grid
- LA's can help drive this by applying the "Merton" rule
- Another help towards cleaner air





# The Future

- Technology advancements are impacting fast on everything we do now and in the future
- The Energy and transport market is changing fast
- You have the opportunity to help the changes happen and benefit financially
- THANK YOU

