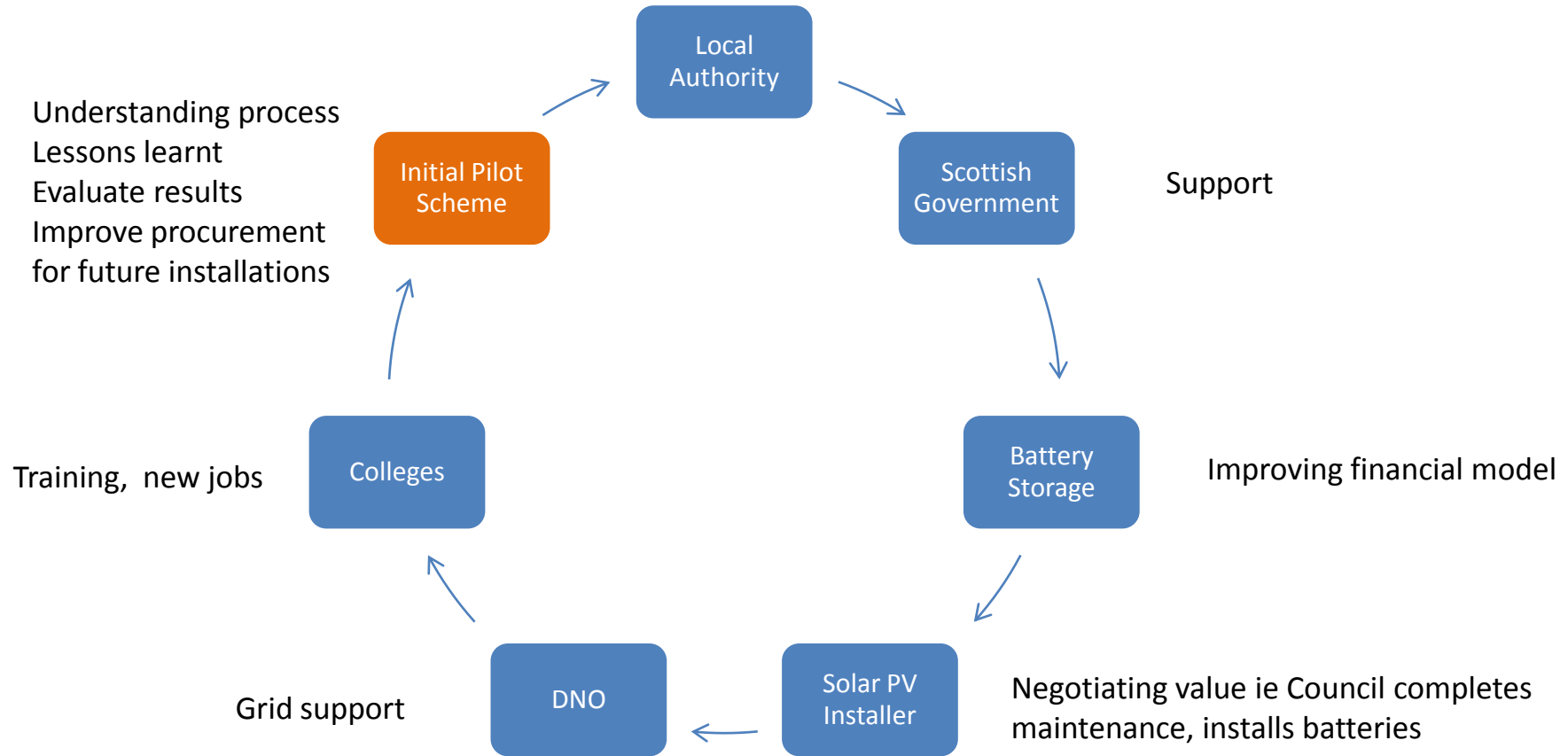
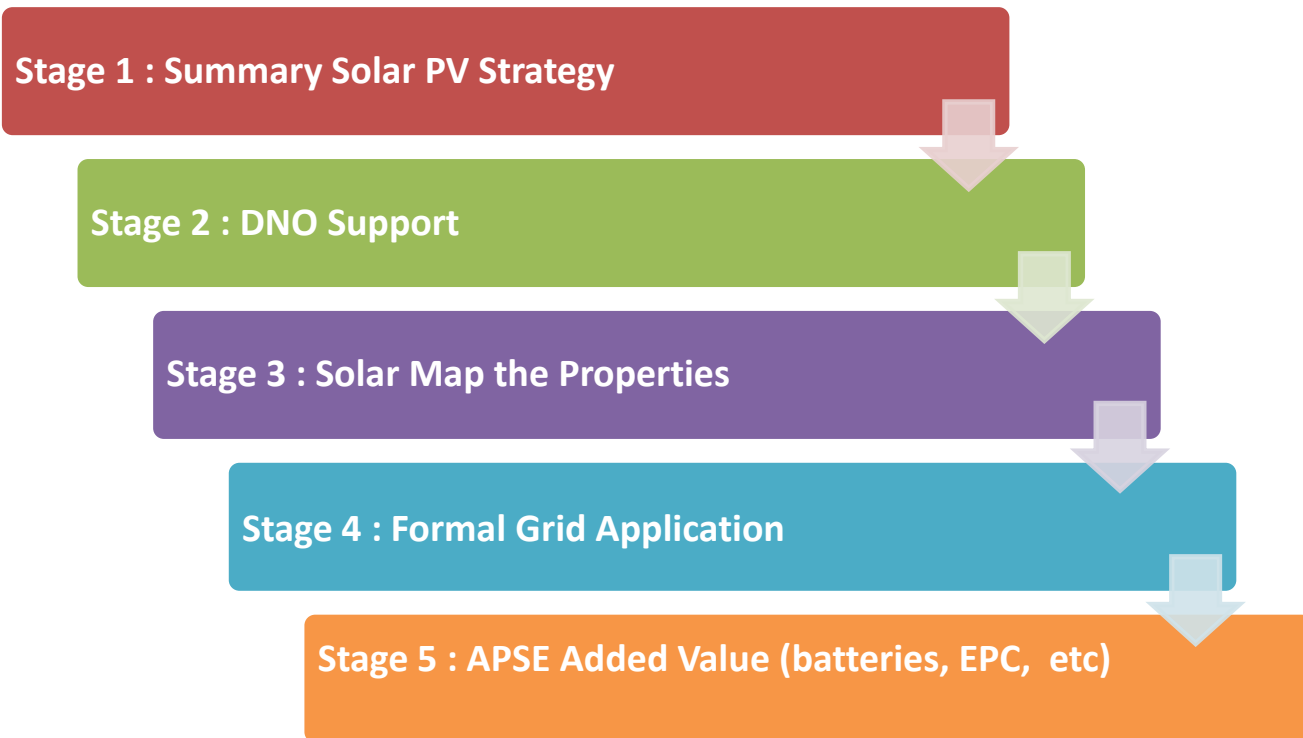


Grid Connections Strategy: Solar PV Roof Mounted

- Understanding process
- Lessons learnt
- Evaluate results
- Improve procurement for future installations



Grid Application Strategy : Roof Mounted Solar PV

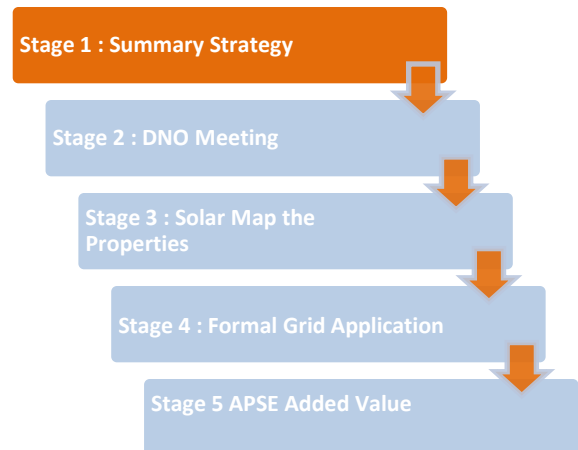


Grid Application Strategy : Roof Mounted Solar PV

Stage 1 : Local Authority Summary Strategy

Can simply be a set of drawings

- How many houses? [1,000 houses may deliver around 500 suitable roofs]
- How many commercial roofs?
- Which areas?
- Phasing?



Grid Application Strategy : Roof Mounted Solar PV

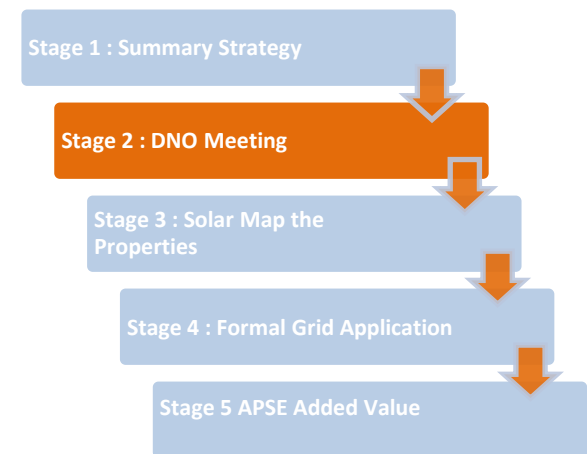
Stage 2 : DNO Meeting and Input into Strategy

The DNO provides advice in the following areas :

- which areas or strategy phases have capacity issues?
- which phases should be installed first (least cost approach)

This may result in the Summary Strategy document being redefined.

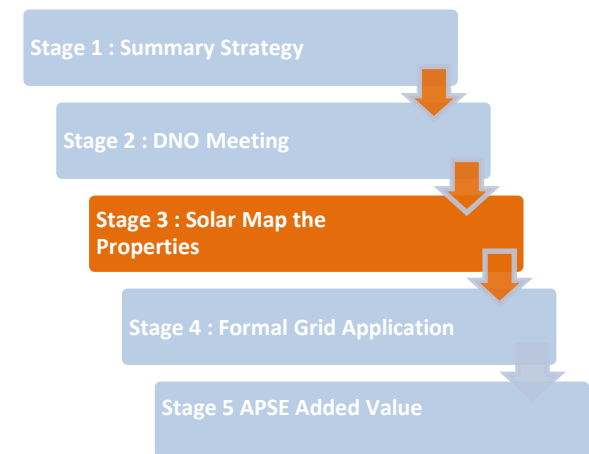
SSE and Scottish Power welcome this approach.



Grid Application Strategy : Roof Mounted Solar PV

Stage 3 : Solar Mapping

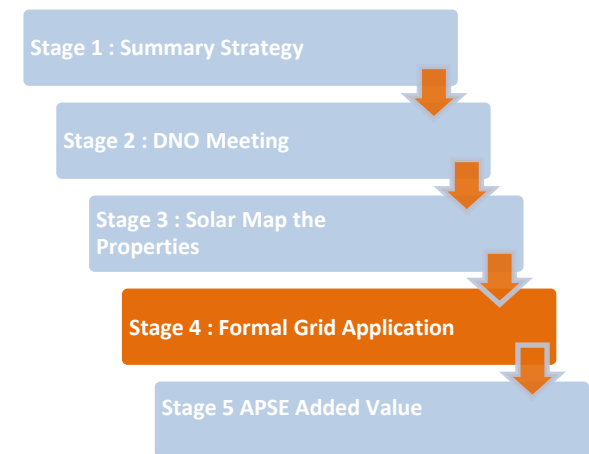
- The DNO needs to know the amount of generation for each roof. This is because each street(s) is connected to a substation and the amount of generation determines if there is an issue on a street by street basis.
- 1,000 houses may result in 500 suitable roofs.
This does depend on the Councils definition of a suitable orientation eg south facing only or east/west facing
- Typical cost £1.50 per roof
- Timescale 7-14 days
(depending on the number of roofs)



Grid Application Strategy : Roof Mounted Solar PV

Stage 4 : Grid Application

- SSE and Scottish Power both recommend a formal G83-2 application.
- Required information :
 - excel spreadsheet with addresses and generation per property (produced as part of solar mapping)
 - Mpan numbers
 - maps 1:500
 - letter of authority
- Timescale 65 working days (may be quicker)
- Cost : zero
- Formal offer is valid for 90 days (and can be extended for a further 90 days)



Grid Application Strategy : Roof Mounted Solar PV

Stage 4 : Grid Application

- If there is an issue with transformer(s) requiring replacement (circa £15,000-£25,000 per transformer), the offer can be revisited
- Should this happen, the offer may then relate to (say) 450 houses as opposed to the initial 500 to achieve a zero/low cost grid connection.

Important :

Accepting a formal offer protects against other (housing) developers securing capacity in the network.

Grid Application Strategy : Roof Mounted Solar PV

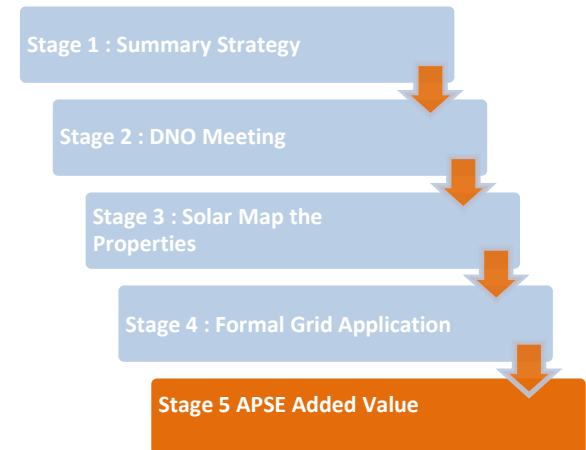
Stage 5 : APSE Energy Added Value

Improvements to the financial modelling

- Income from selling electricity to tenants at discounted rate
- Income from selling aggregated stored electricity back into the grid
- Income from carbon savings - £16 per house pa

- Panel maintenance retained in house (saving £45 per house pa)
- Council install battery storage

- Scottish Government support



Thank you for your time

.....and any other questions

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