P350 INTRODUCTION OF A SEASONAL ZONAL TRANSMISSION LOSSES SCHEME

SCOTTISH RENEWABLES – IMPACT ANALYSIS

08 Nov 2016   SR GSG

- P350 overview

- Impact assessment – TLFs

- Impact of Scottish Renewables

$$TLM = 1 + \boxed{TLF} + TLMO$$

BSC Section T - 2.3.1

P350 KEY POINTS

- One TLF will be calculated per zone, per season (spring, summer, autumn, winter).

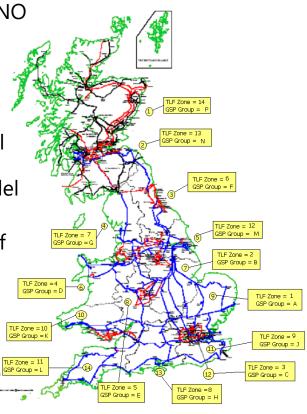- There will be 14 TLF Zones based on the GSP Groups (i.e. DNO regions).

- A new network mapping statement will be produced to determine the zonal boundaries and how it relates to each system node (by National Grid).

- The TLFs will be calculated using a specific Load Flow Model with data from 'sample settlement periods' taken from historical data (and will be documented in a Load Flow Model Specification).

- TLFs will be published 3 months ahead (T-3m) of the start of the BSC year (01 April) based on historical data from the 12 month period ending T-7m (31 August).

- A scaling factor of 0.5 will be applied to the TLFs (to split system losses between fixed and variable).

- Load periods and sample settlement periods will be used to determine the load flows.

TLF Zone = 14 GSP Group = P
TLF Zone = 13 GSP Group = N
TLF Zone = 6 GSP Group = F
TLF Zone = 7 GSP Group = G
TLF Zone = 12 GSP Group = M
TLF Zone = 2 GSP Group = B
TLF Zone = 4 GSP Group = D
TLF Zone = 1 GSP Group = A
TLF Zone = 10 GSP Group = K
TLF Zone = 9 GSP Group = J
TLF Zone = 11 GSP Group = L
TLF Zone = 3 GSP Group = C
TLF Zone = 5 GSP Group = E
TLF Zone = 8 GSP Group = H

P350 impact assessment - TLFs

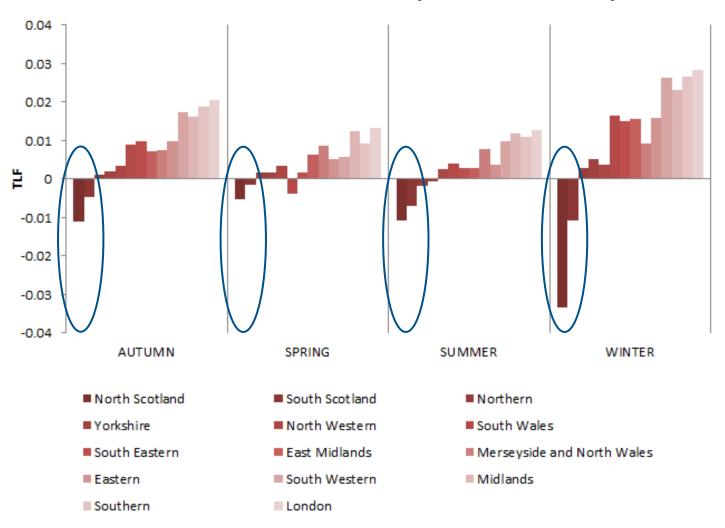- **Impact assessment - 4 modelling sensitivities were developed:**

1. Task 1 – Baseline results (P229 method)
2. Task 2 – Baseline results excluding interconnector BM Units from zonal calculation
3. Task 3A – HVDC option A approximating HVDC as a load/generation pair at the relevant nodes.
4. Task 3B – HVDC option B approximating HVDC link as an AC link.

Elexon published, on 04 November 2016, an Assessment Procedure Consultation which sets out the intended proposal to be put forward to the BSC panel. **The consultation outlines the intention to recommend a methodology which excludes interconnector BM Units from calculating the Zonal Transmission Loss Factor and opts to model HVDC links as a load/generation pair (Option A).**
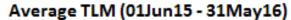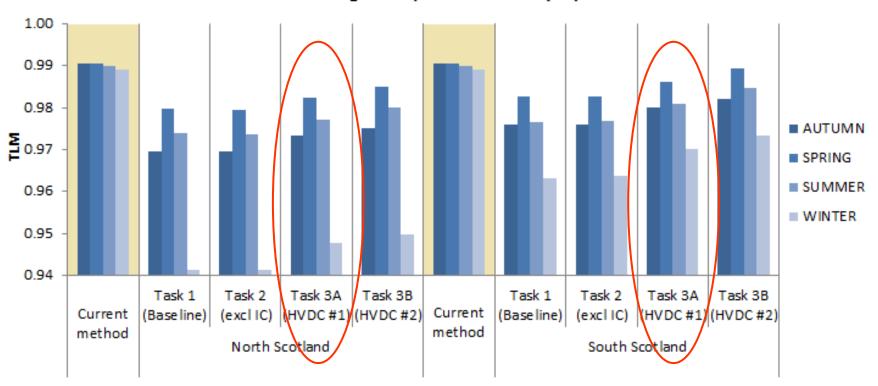
Load flow modelling results

Calculated TLF values, Task 3A (01Jun15 - 31Mar16)

Average TLM (01Jun15 - 31May16)

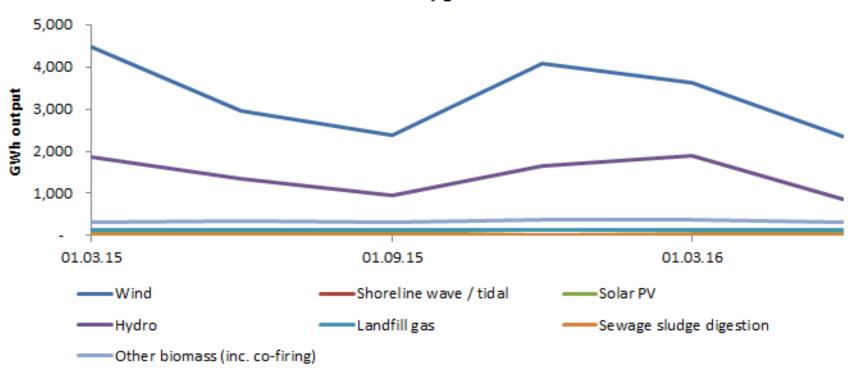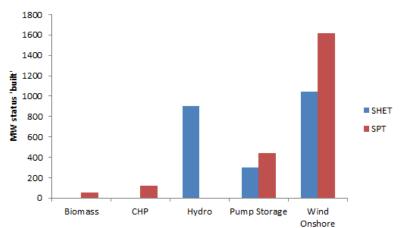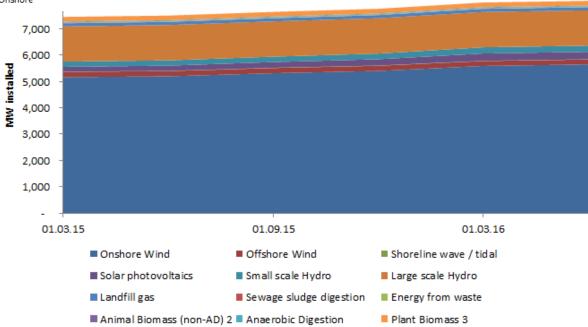# Generation output

Renewable electricity generation: Scotland

Generation capacity

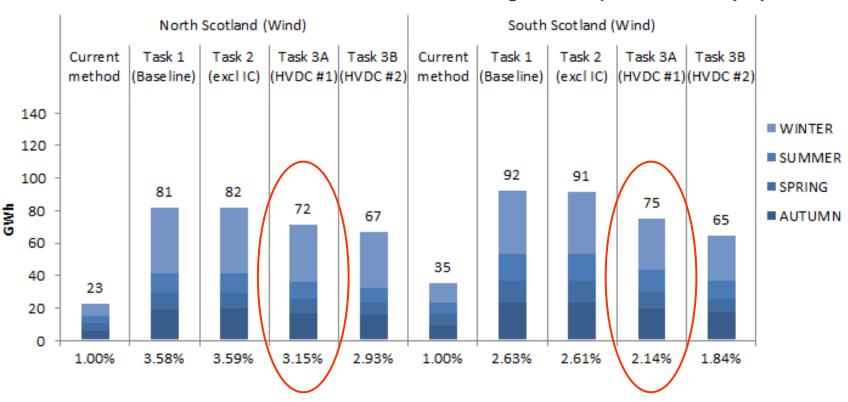## Transmission connected generation (TEC register - dated 16 Oct 2016)

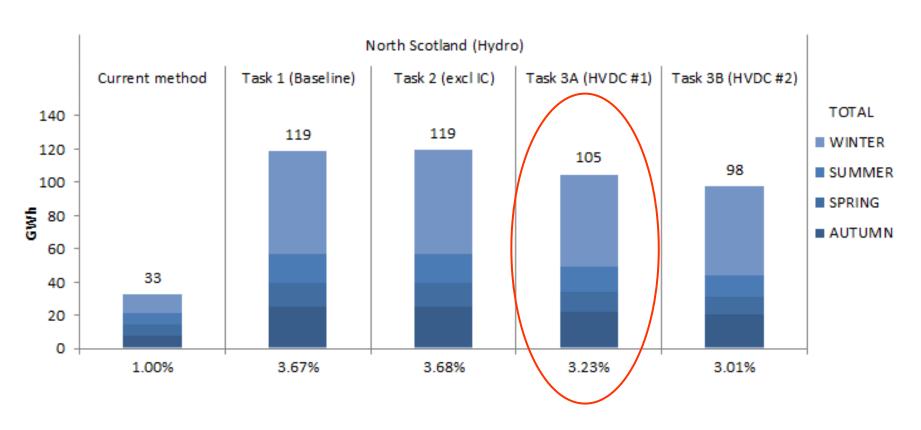## Renewable electricity capacity: Scotland

Calculated impact -results

Volumes netted from Transmission connected wind generators (01Jun15 - 31May16)
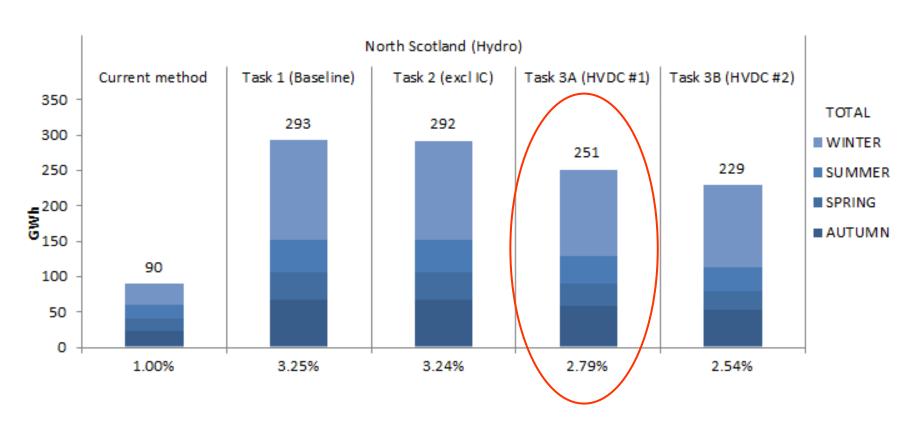
Calculated impact -results

Volumes netted from Transmission connected hydro (01Jun15 - 31May16)

Volumes netted from Transmission connected hydro + wind (01Jun15 - 31May16)

Version History and References

Version History

V	AUTH	DATE	NOTES
A	MRS	07/11/2016	First version

References