# MOD693R

## AUGE Presentation on UIG from Volume Conversion

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# Agenda

- Volume Conversion Overview
- Summary of work carried out by AUGE
- Magnitude of UIG from Volume Conversion
- Issues for consideration

# Overview of Volume Conversion

- Volume Conversion Factors
  - Pressure
    - Atmospheric Pressure (MSL)
    - Regulator Pressure
    - Altitude

    Site Specific CF (Fixed)
  - Temperature
    - Gas Temperature at Meter
      - Meter Location (Internal/External)
      - Flow-weighted
  - Compressibility

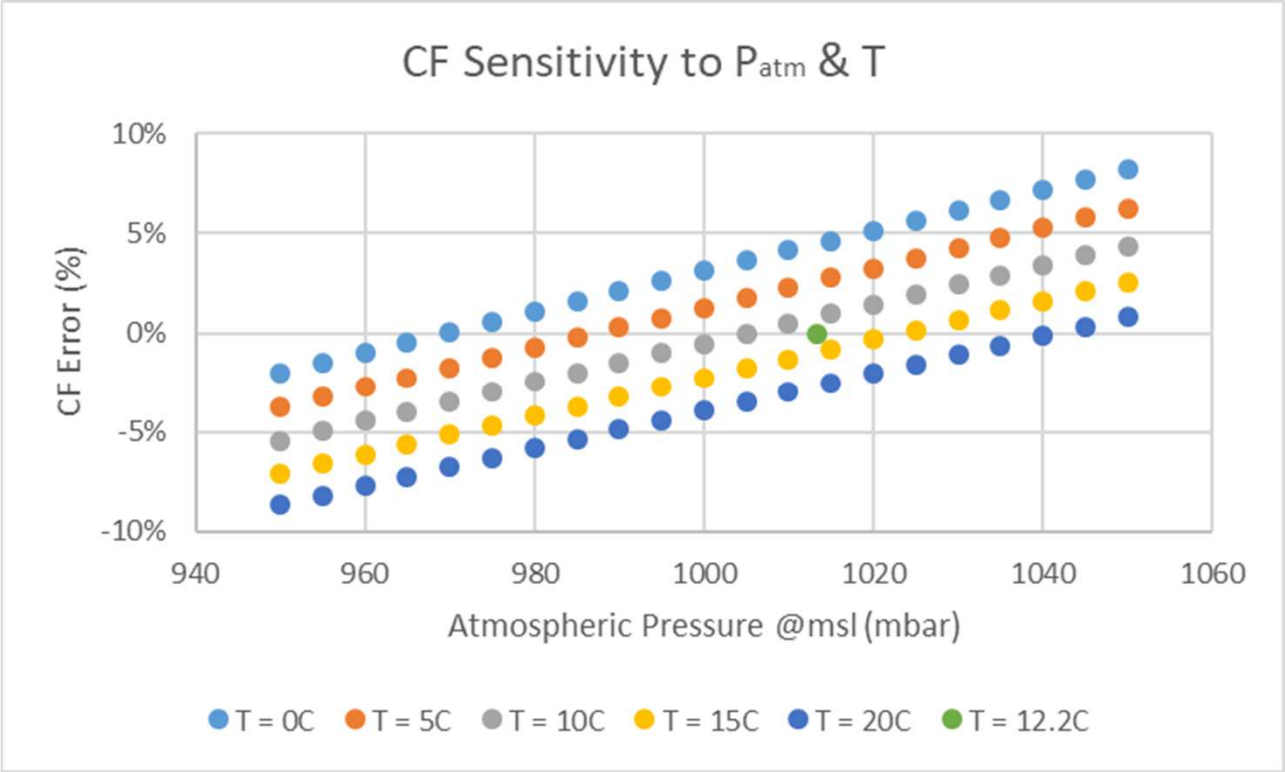
# Summary of AUGE Volume Conversion Work

- 2019/20 AUGS
  - Introduced Atmospheric Pressure UIG (National average, Seasonal Normal)
  - Assessed Altitude
  - Assessed Gas Temperature
    - Lack of data prevented robust estimation
    - Proposed lab tests to understand relationship between gas temperature and air/ground temperature
  - UIG from Sites incorrectly using Standard CF

- 2020/21 AUGS
  - Pressure related UIG calculated by LDZ
  - Gas Temperature related UIG calculated by LDZ based on studies from 1996-2000

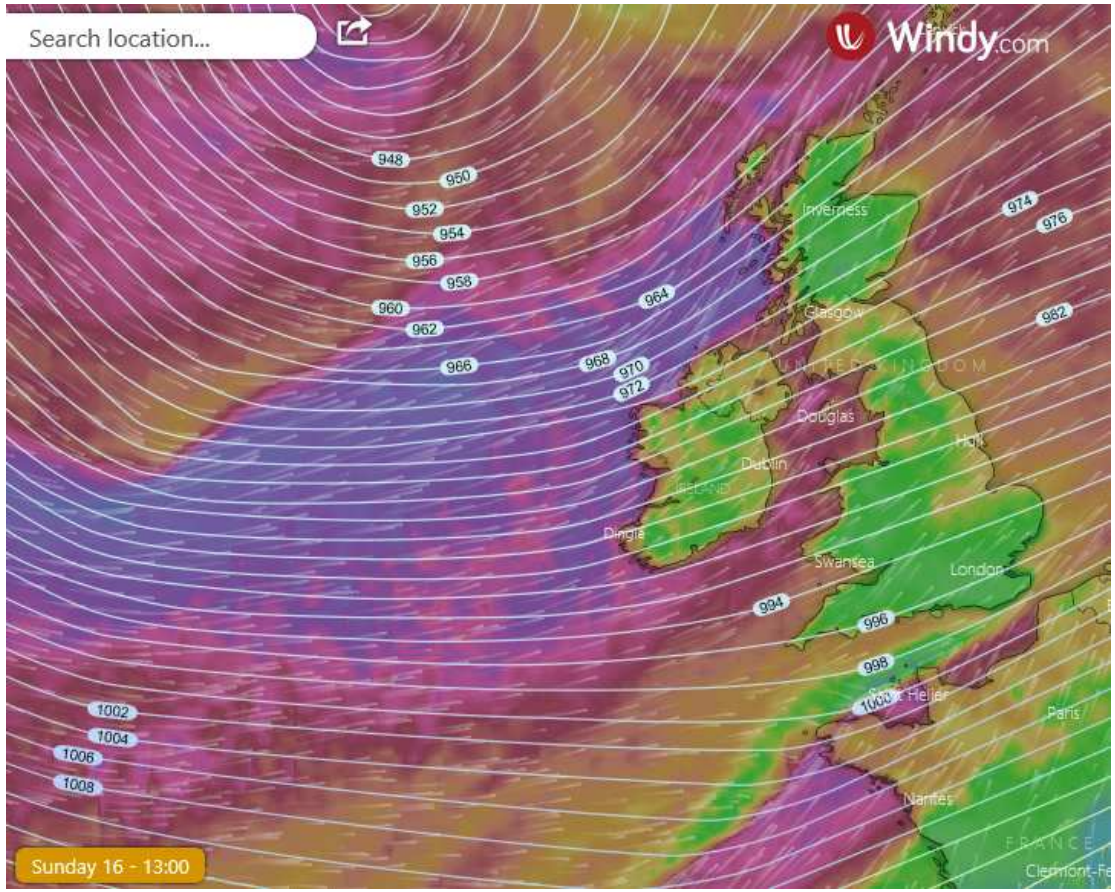
# Magnitude of UIG from Volume Conversion

- Approx. 80% of throughput from meters without Volume Converters
- T < 12.2C, P > 1013.25mbar: Positive UIG



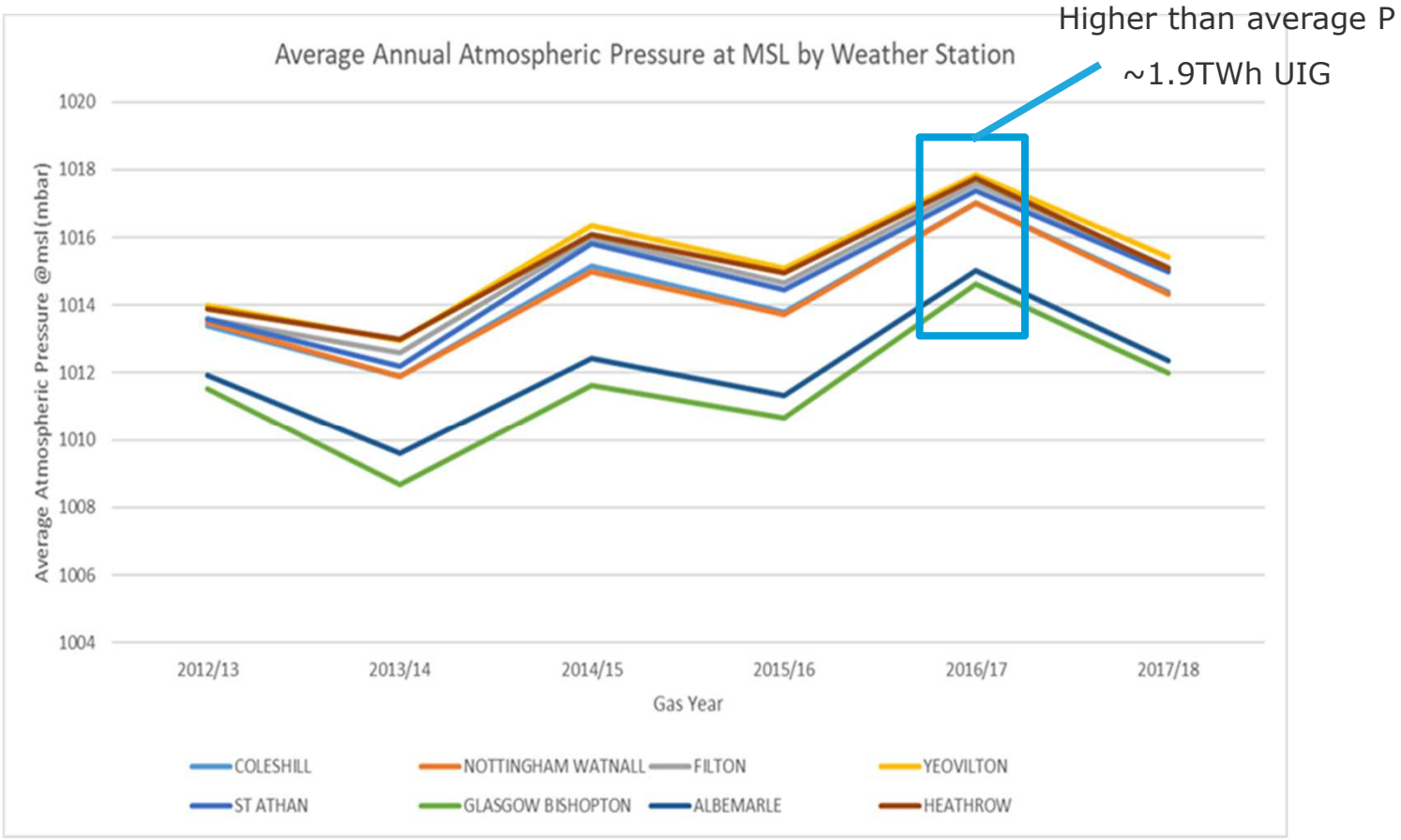
# Atmospheric Pressure – Storm Dennis

- Glasgow – 974mbar (-3.1% CF error)
- London – 996mbar (-1.4% CF error)



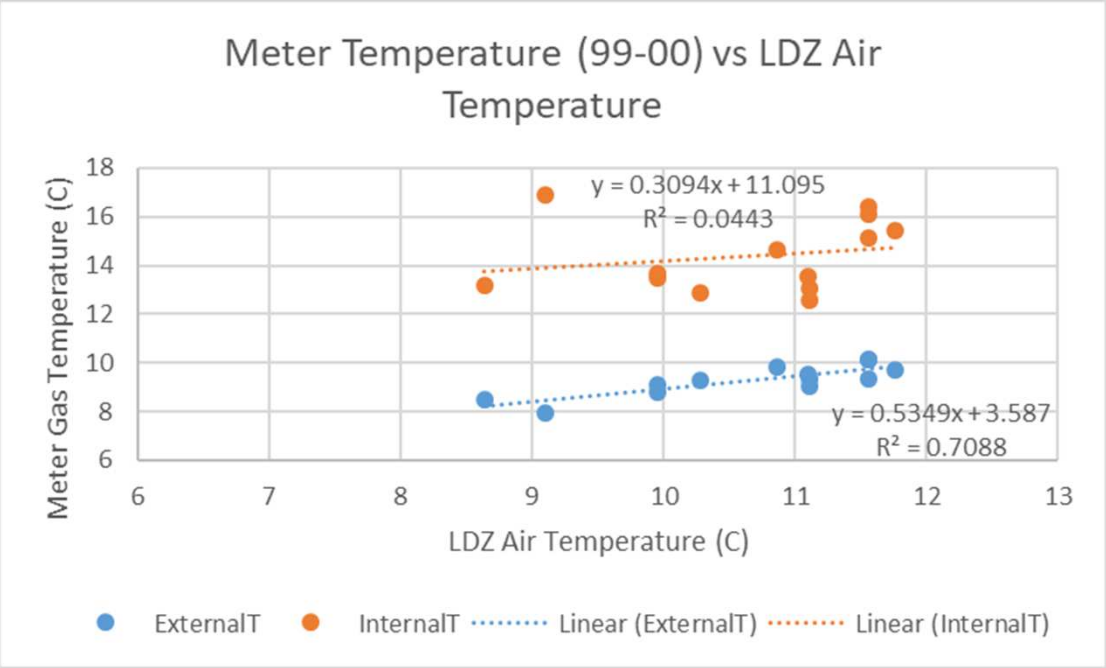
# Atmospheric Pressure – Annual Averages

- Atmospheric Pressure related to latitude
- Total UIG from Atmospheric Pressure ~56GWh



# Metered Gas Temperature

- Two studies carried out 1996-2000
  - Domestic Meter Temperature Survey (DMTS)
  - 'The derivation of LDZ gas temperatures for the period 1996-2000' (ICTS)
- Meter Location information from CDSP
- Total UIG from Temperature ~555GWh




| LDZ | 01B | 02-03 | 04-08 | 09B |
|---|---|---|---|---|
| EA | 11.70 | 12.29 | 10.10 | 11.10 |
| EM | 11.30 | 11.64 | 10.90 | 12.10 |
| NE | 11.03 | 11.71 | 9.90 | 11.20 |
| NO | 11.05 | 11.26 | 9.40 | 10.50 |
| NT | 13.96 | 14.28 | 13.40 | 14.80 |
| NW | 11.54 | 11.43 | 10.40 | 11.40 |
| SC | 10.79 | 11.11 | 8.80 | 9.90 |
| SE | 13.52 | 13.16 | 11.50 | 13.00 |
| SO | 11.97 | 12.18 | 10.60 | 11.80 |
| SW | 10.94 | 11.43 | 11.00 | 12.10 |
| WM | 11.29 | 11.23 | 10.00 | 10.70 |
| WN | 10.49 | 10.58 | 9.90 | 10.70 |
| WS | 12.41 | 12.45 | 11.30 | 12.60 |
| Average | 11.69 | 11.90 | 10.55 | 11.68 |

# Issues for Consideration

- Issues relating to UIG factors
  - UIG factors assume Seasonal Normal weather
  - No account taken of daily weather variations (Volume conversion is a significant contributor to daily UIG volatility)
  - Currently only National
  - EUC/Product Class split not ideal to capture presence of Volume Converters

- Data Issues
  - Quality of meter location data (~23% have no location)
  - Uncertainty around gas temperatures for internal meters, especially small I&C
  - Access to meter regulator pressures

# Thank you

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