

The Winter storms of 2015/16

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Winter Storm naming system 2015-2016

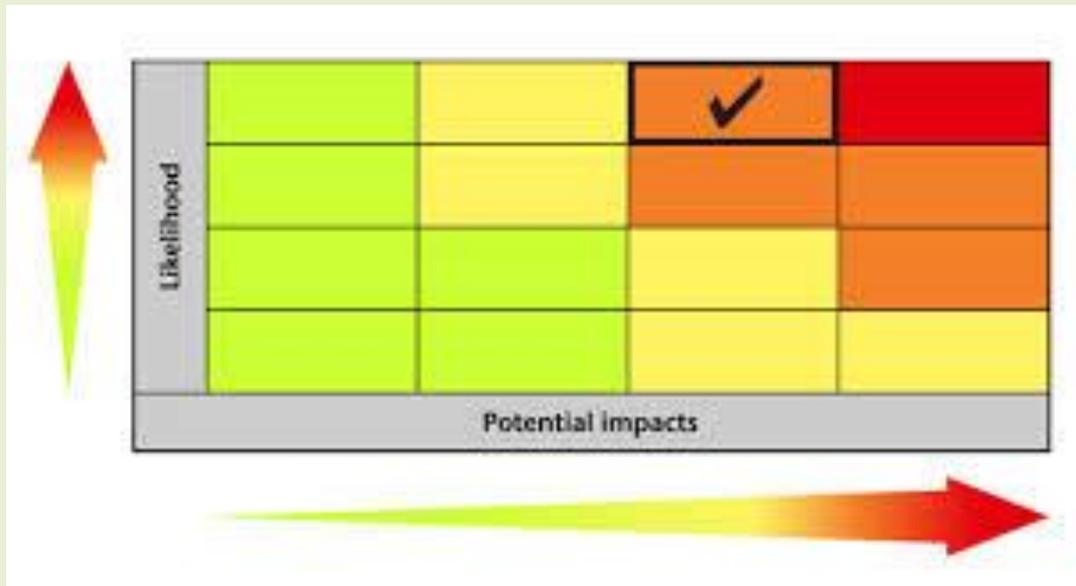
- Joint arrangement between Met Eireann and UKMO
- PURPOSE – To highlight and enhance awareness of severe weather affecting Ireland and UK.

Met Eireann criteria for storm naming

- **Red** wind warning:
 - Mean wind speeds of greater than 80 Km/hr (43 Kts)
 - Gust speeds of greater than 130 Km/hr (70 Kts)
- **Orange** wind warning:
 - Mean wind speeds of 65 to 80 Km/hr (35 to 43 Kts)
 - Gust speeds of 110 to 130 Km/hr (59 to 70 Kts)
- Threshold based warning system
 - Makes decisions on storm naming very clear cut.

UKMO Storm naming system

- Impact based system using warning matrix
- Storm names require an **Amber** or **Red** warning



Winter storms 2015 - 2016

#IrishStorm



2015-2016 Winter Storm Names Ireland and United Kingdom

The National Meteorological Services of Ireland and the UK will be analysing the weather this storm season and keeping an eye out for #stormAbigail, #stormBarney, ...

Thus for the first time in Ireland, wind storms will be named* when the following criteria are met:

- ✓ a wind storm with potential for significant land-based impact has been forecast by Duty Forecasters in both Met Éireann and the Met Office
- ✓ severe wind events giving rise to status **Orange** or status **Red** weather warnings (for an explanation of the Met Éireann weather warning system, see www.met.ie)

If an Atlantic storm was assigned a name by the National Hurricane Centre in the US, it will keep that name.

* The names were chosen by the public in both Ireland and the UK.

Names beginning with Q, U, X, Y, Z are not included so as to ensure consistency with the naming convention of the National Hurricane Center, see <http://www.wmo.int/pages/prog/www/ftp/Storm-naming.html> for more information.

Follow forecast tweets from @METeireann

Follow tweets from @METclimate

in association with the 

 met.ie
The Irish Meteorological Service Online

Names in the circular diagram: Wendy, Abigail, Barney, Clodagh, Desmond, Eva, Frank, Gertrude, Henry, Imogen, Jake, Katie, Lawrence, Mary, Nigel, Orla, Phil, Rhonda, Steve, Tegan, Vernon.

Storm naming Winter 2015/ 2016

- Both Weather services could name a storm
- Communication between Chief forecaster on duty from Met Eireann and UKMO before naming a storm
- Excellent co-operation between the two sets of forecasters.

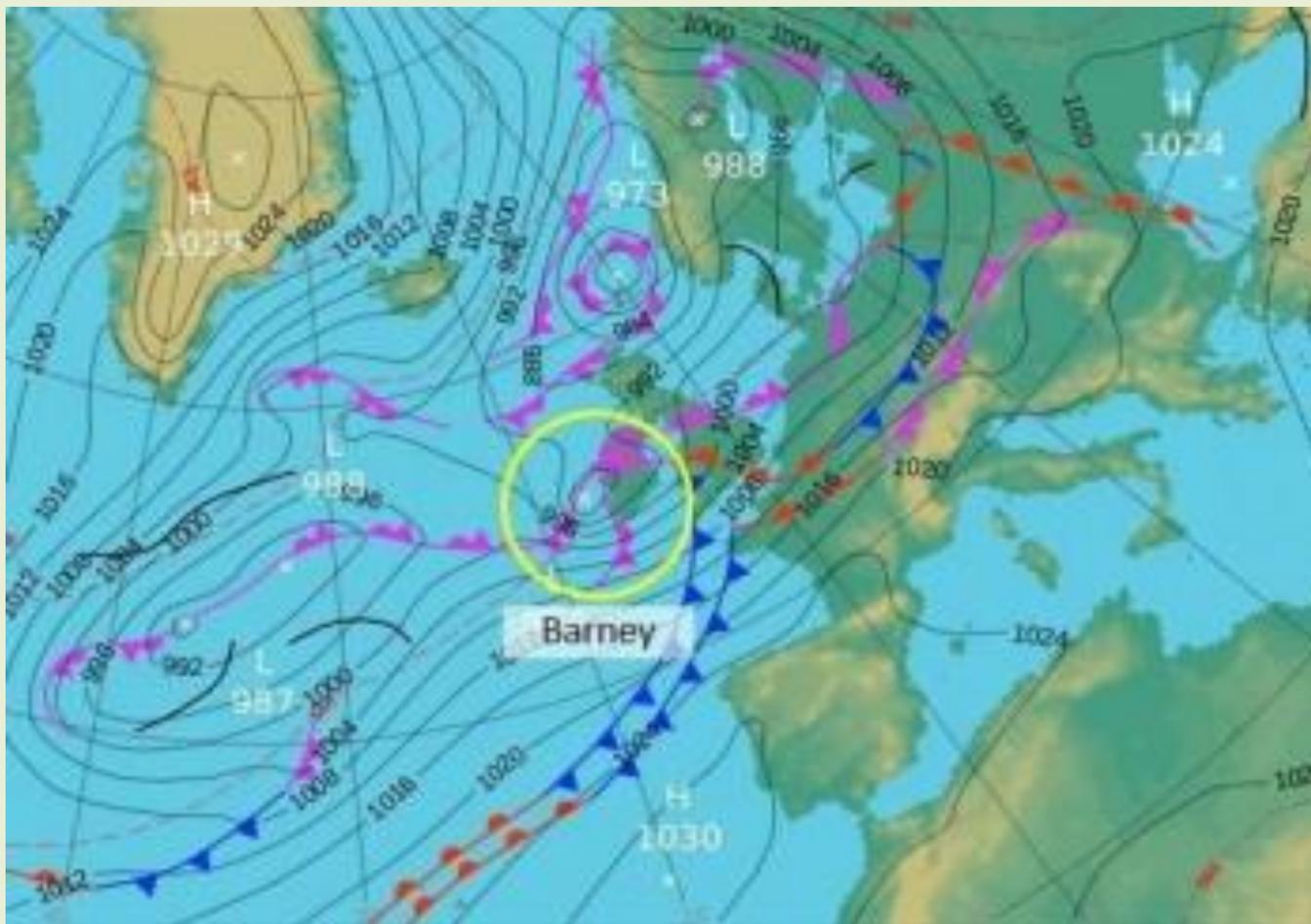
Forecaster requirements

- Forecast needs to be consistent
- Accurate in terms of wind strength
- Accurate in terms of location of depression

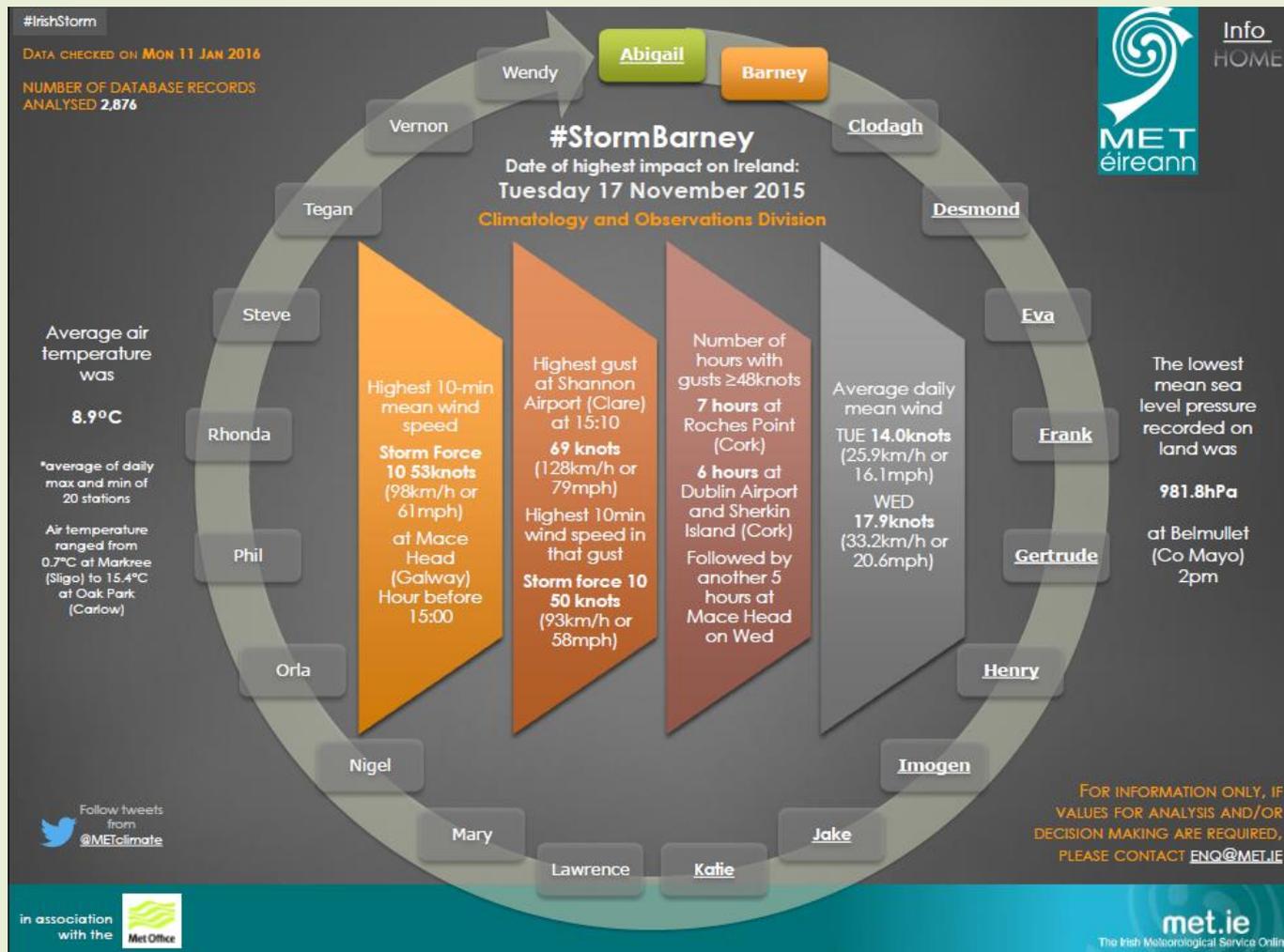
Storm Barney – 17th November 2015



Storm Barney – 17th November 2015

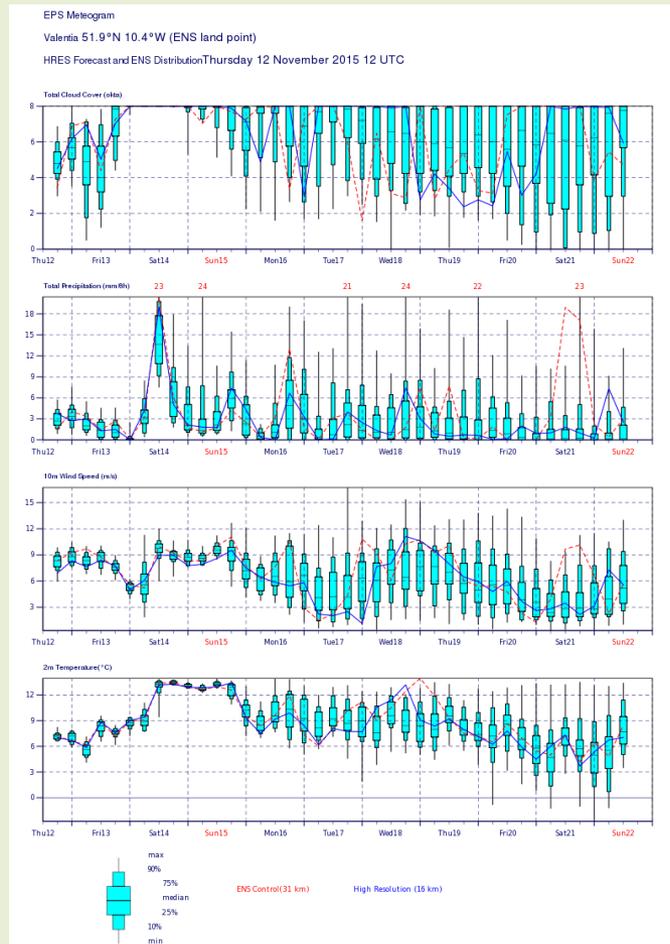


Storm Barney – 17th November 2015



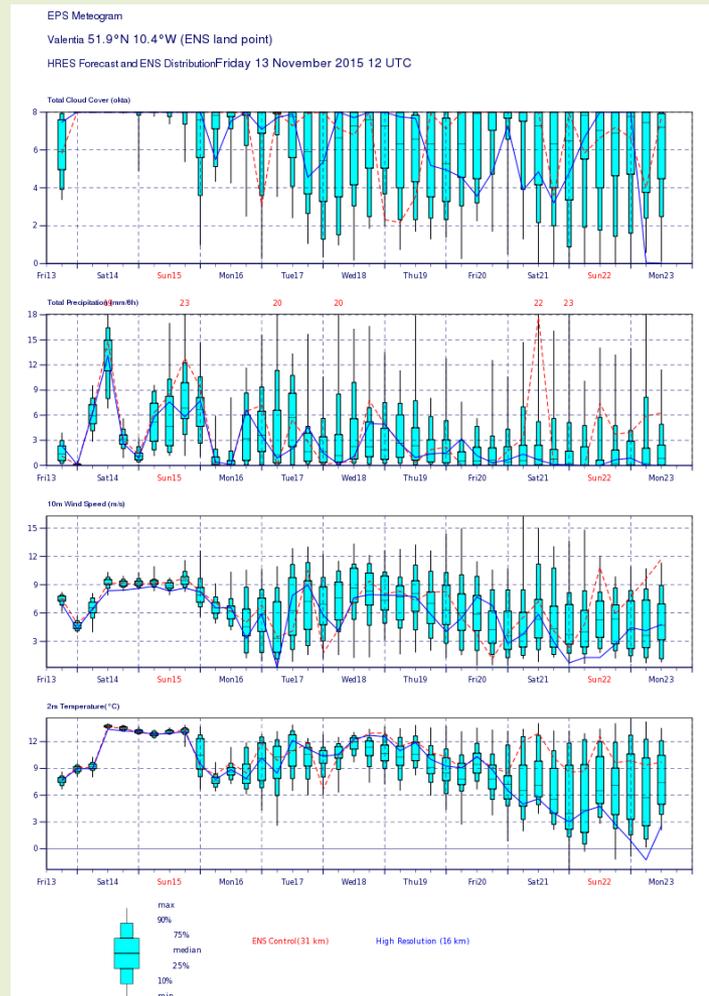
Met Eireann Climate & Observations division

Storm Barney – 17th November 2015



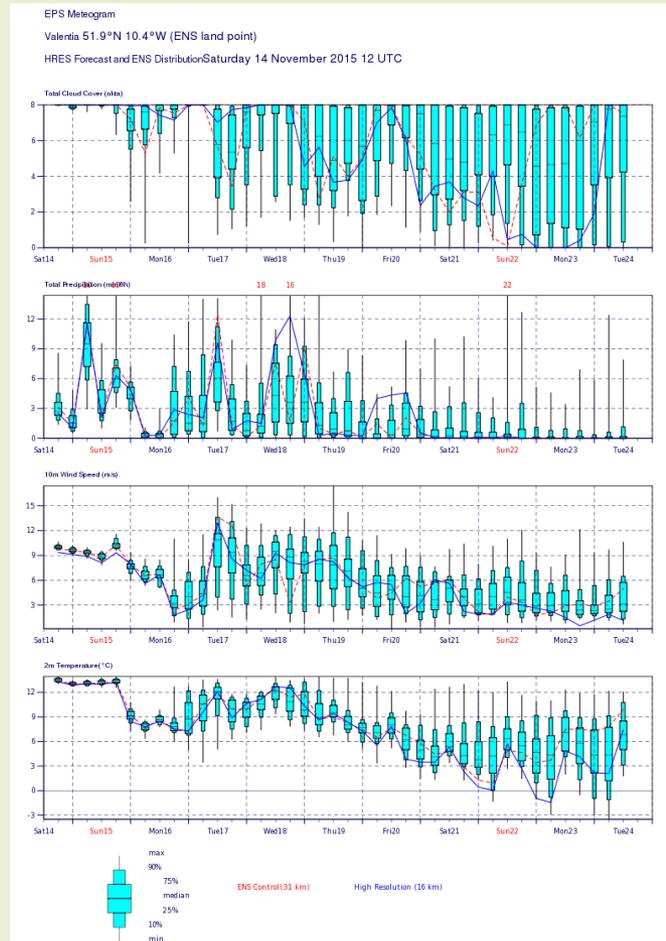
ECMWF 12:00 12th November – VT 12:00 17th November

Storm Barney – 17th November 2015



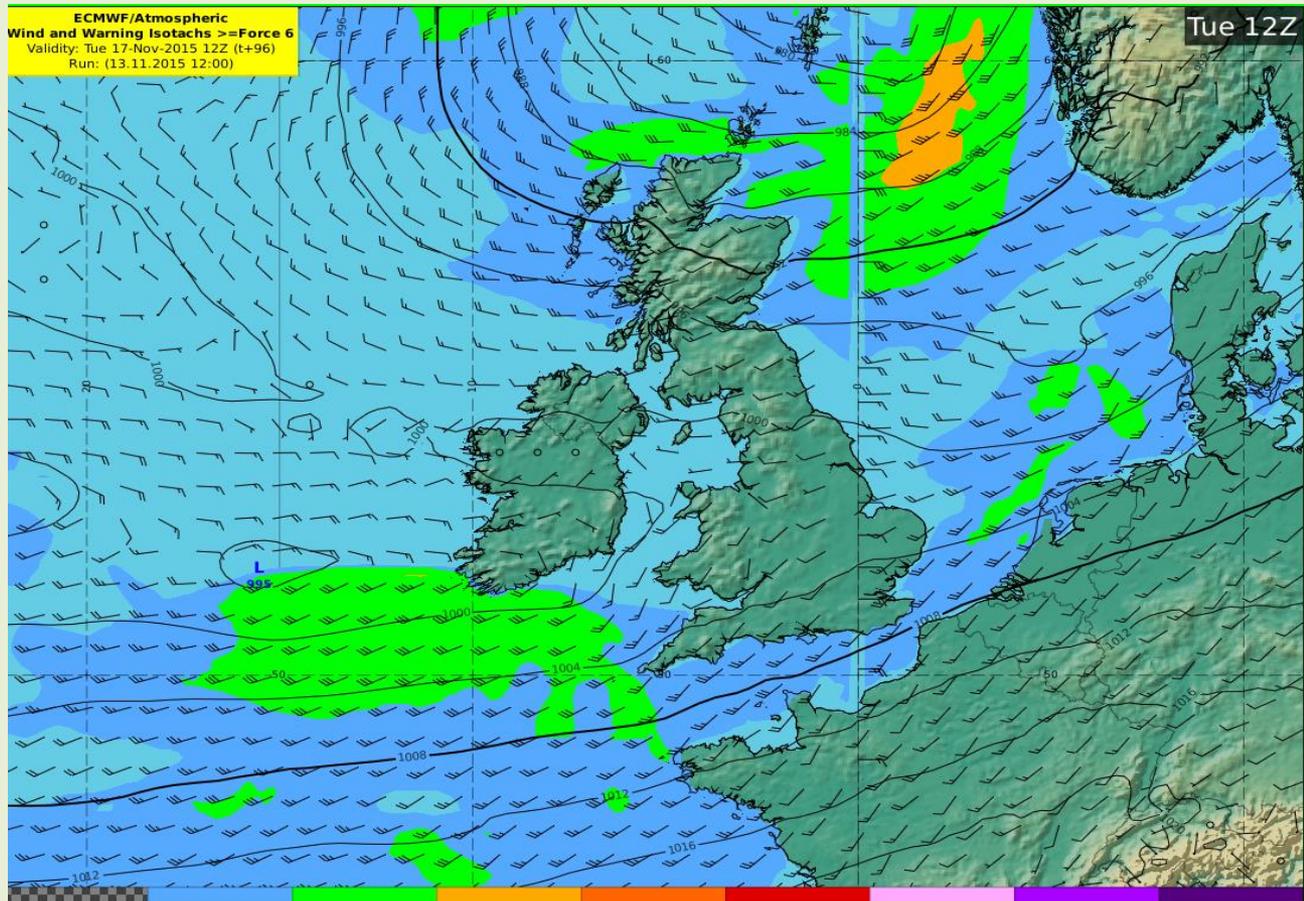
ECMWF 12:00 13th November – VT 12:00 17th November

Storm Barney – 17th November 2015



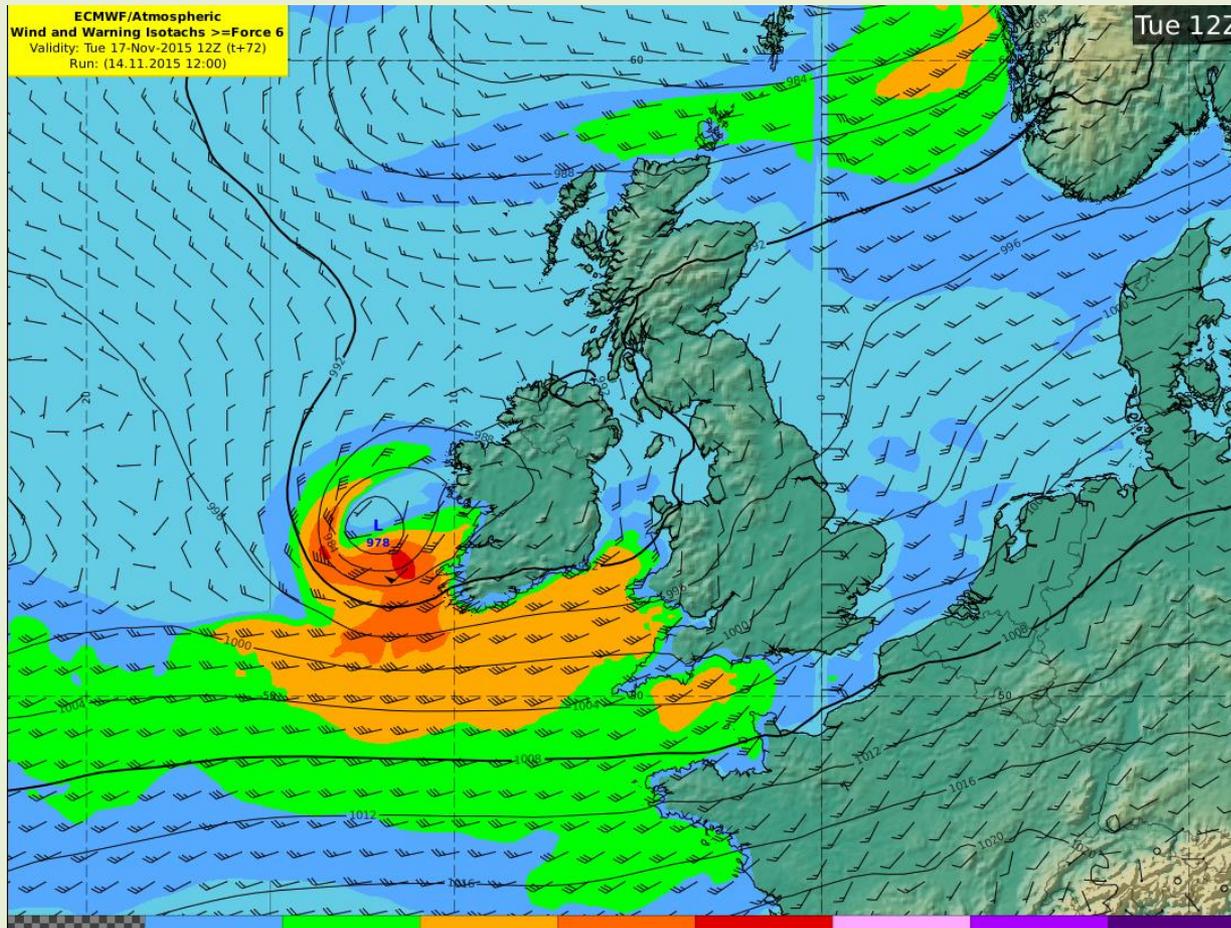
ECMWF 12:00 14th November – VT 12:00 17th November

Storm Barney – 17th November 2015



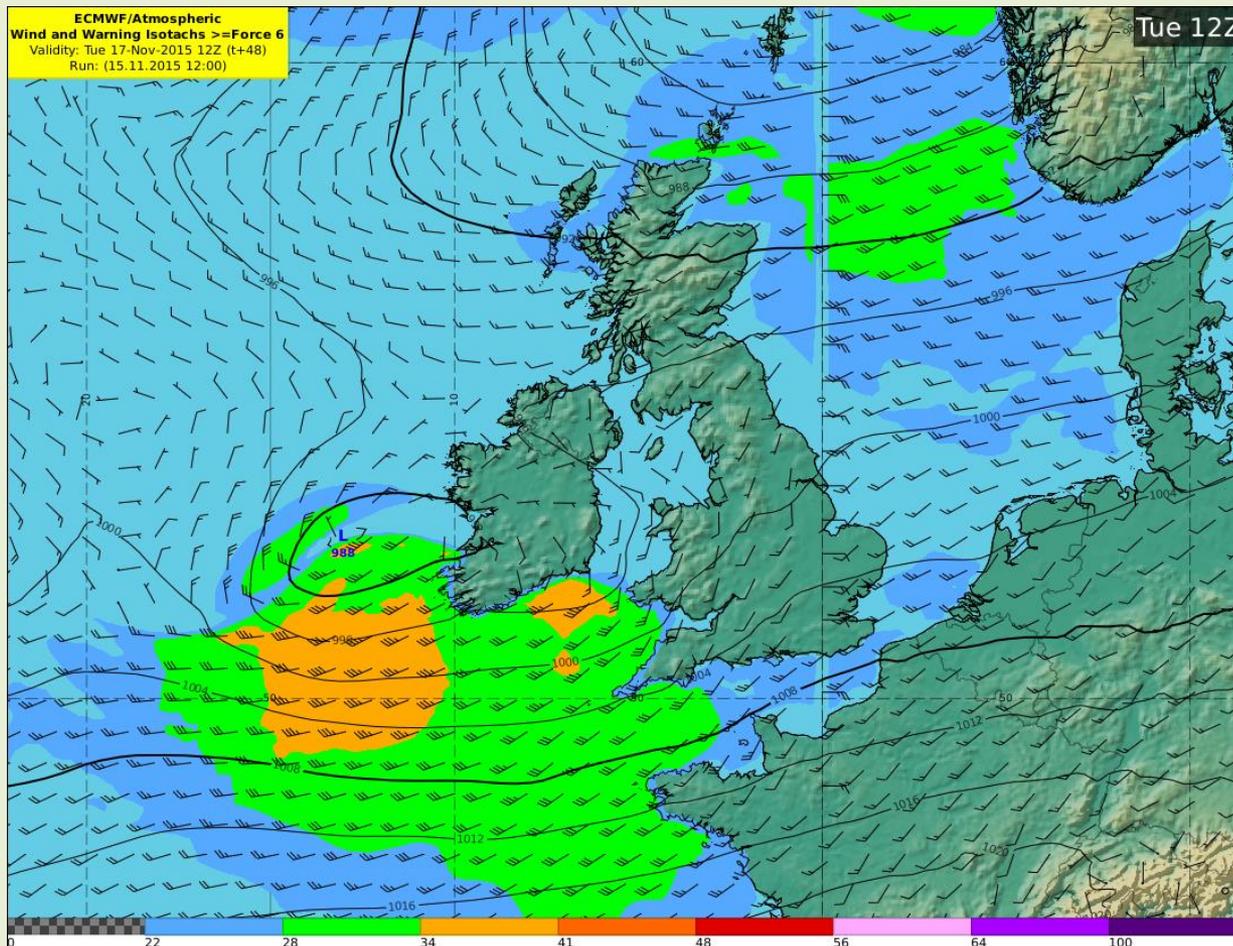
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Storm Barney – 17th November 2015



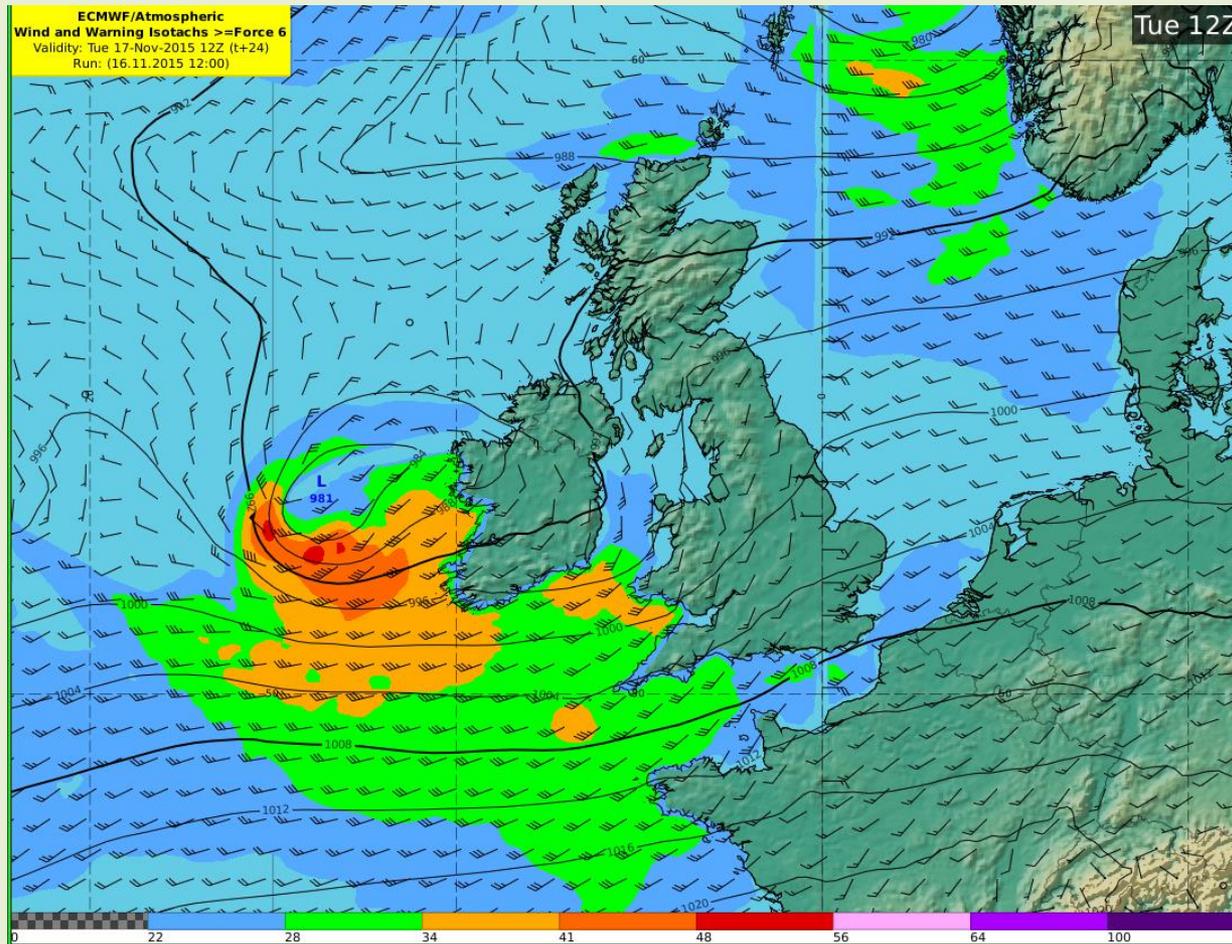
ECMWF 12:00 14th November – VT 12:00 17th November

Storm Barney – 17th November 2015



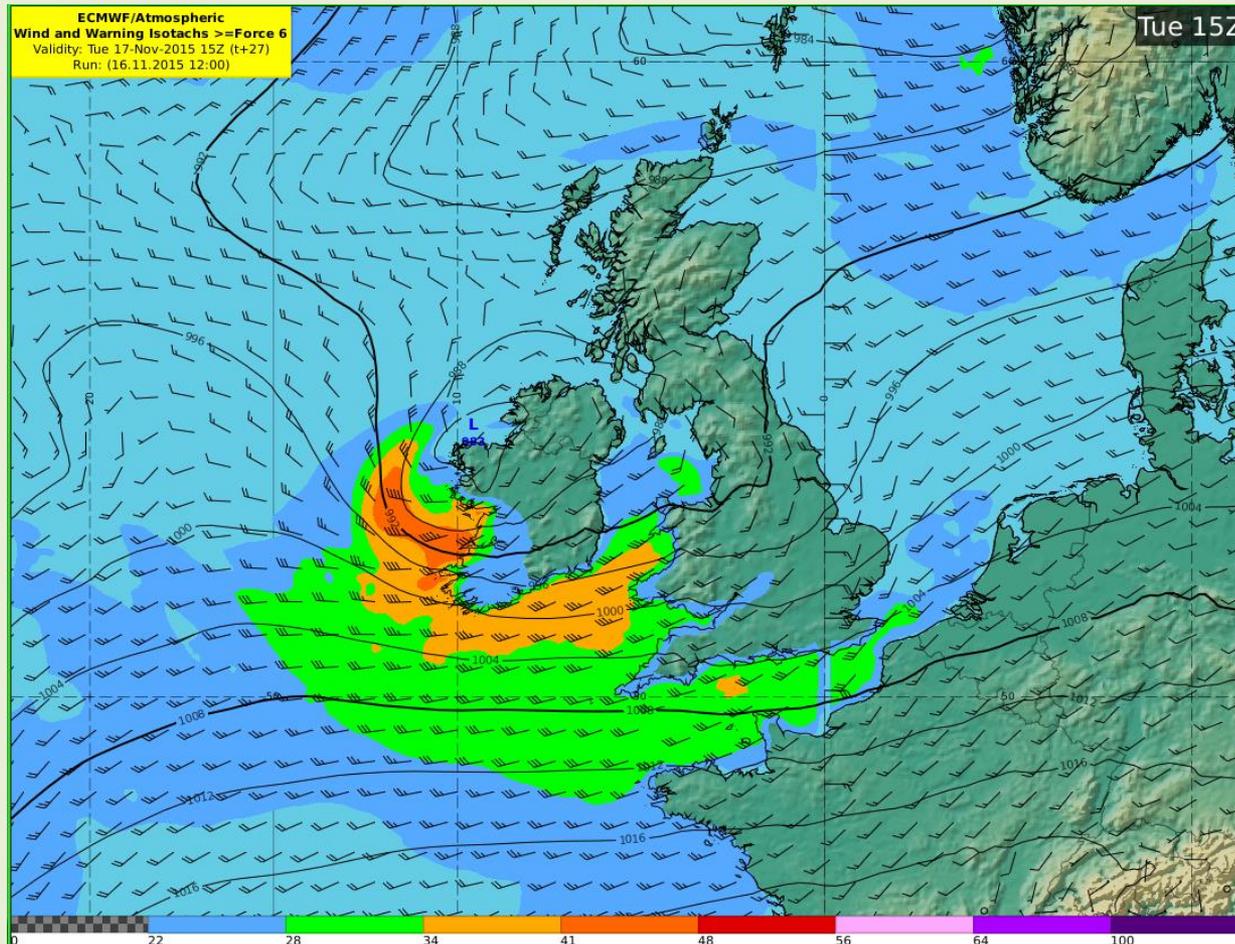
ECMWF 12:00 15th November – VT 12:00 17th November

Storm Barney – 17th November 2015



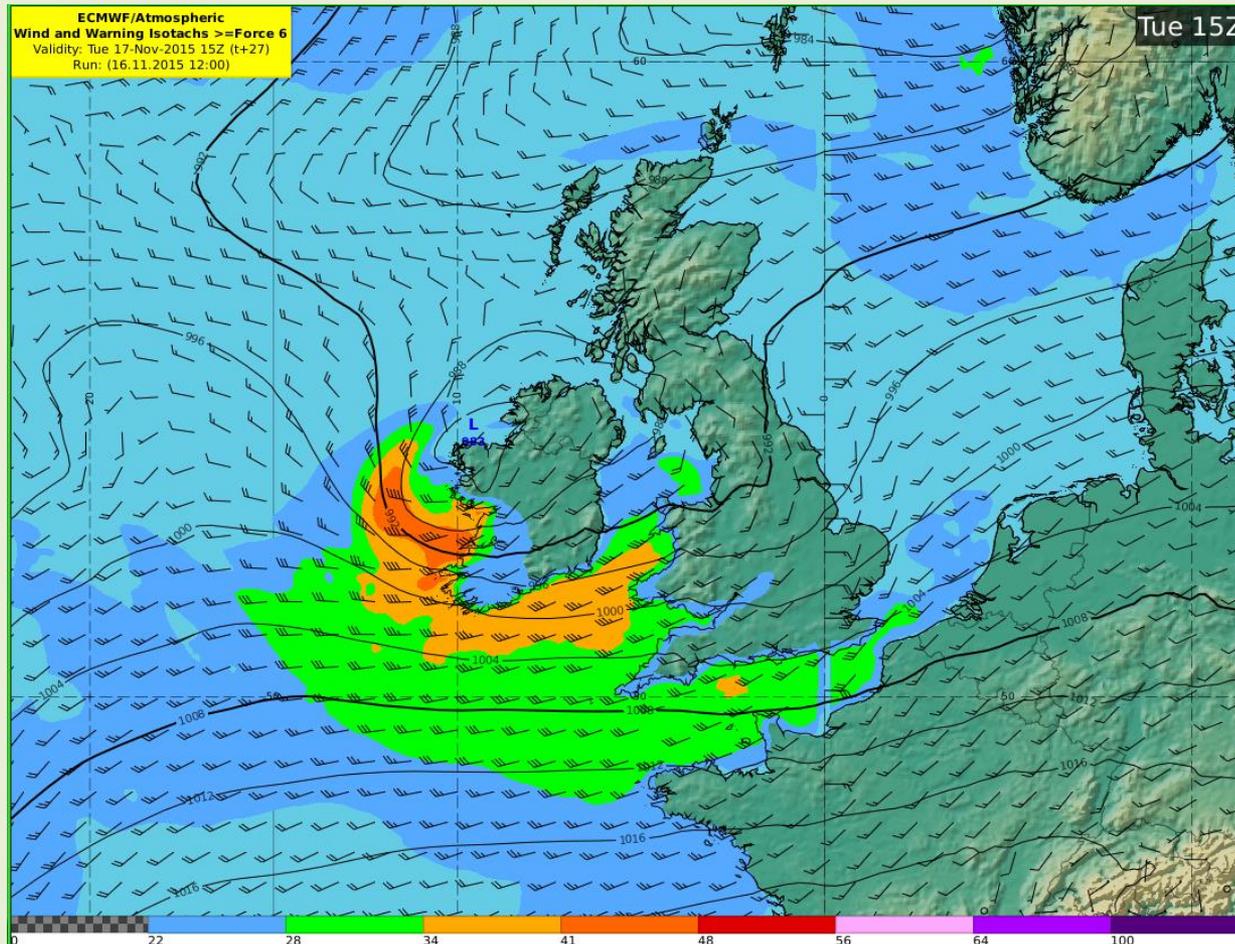
ECMWF 12:00 16th November – VT 12:00 17th November

Storm Barney – 17th November 2015



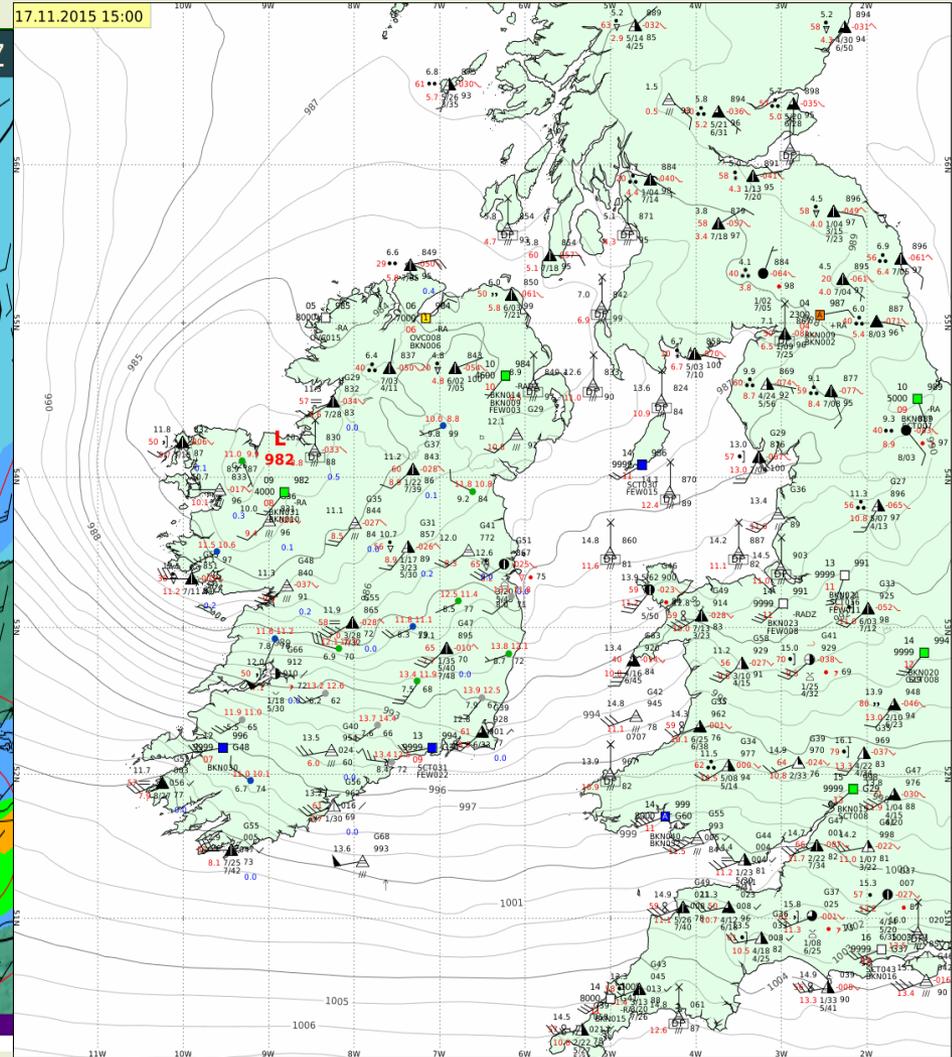
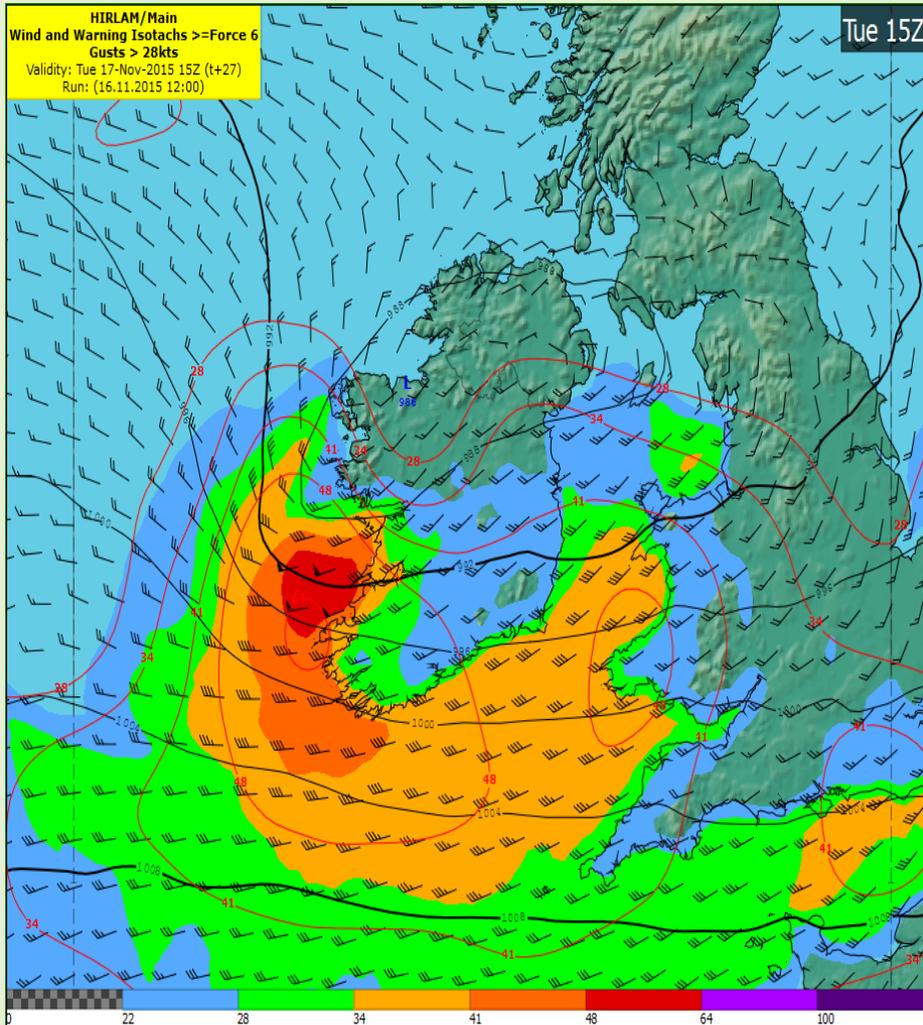
ECMWF 12:00 16th November – VT 15:00 17th November

Storm Barney – 17th November 2015



ECMWF 12:00 16th November – VT 15:00 17th November

Storm Barney – 17th November 2015



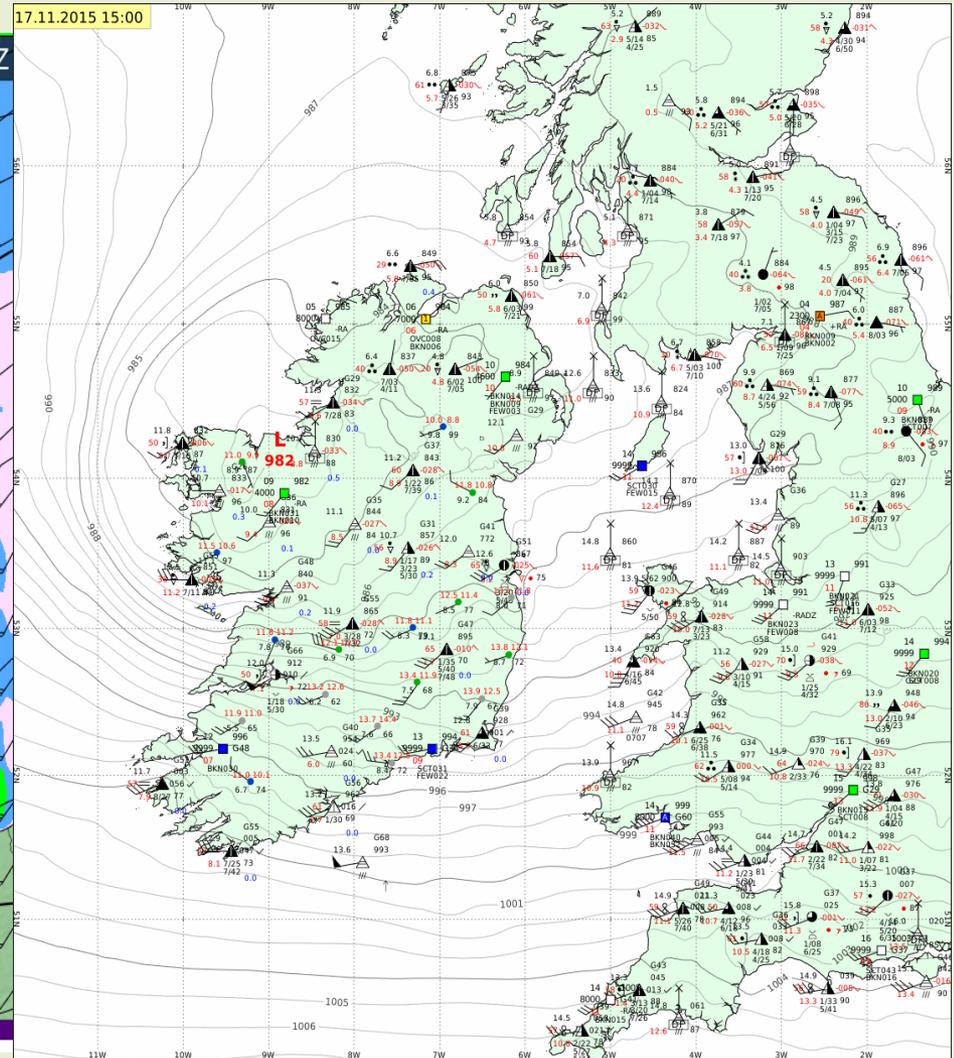
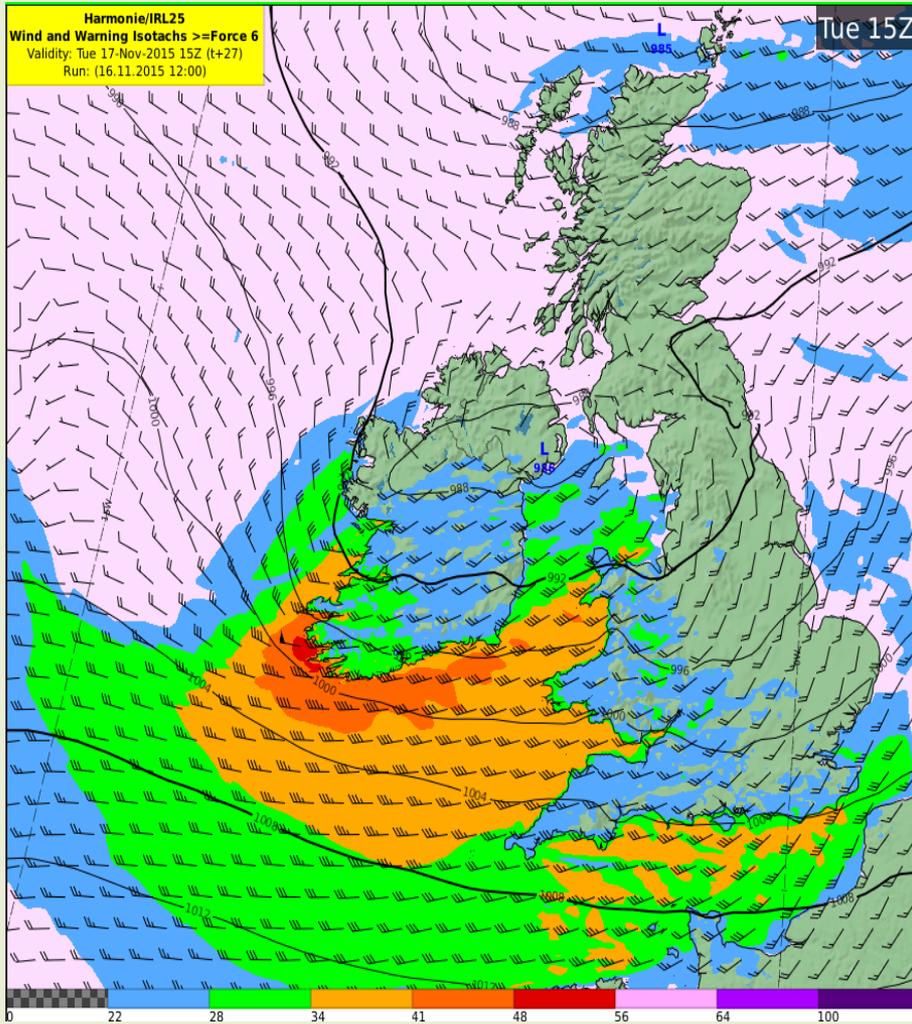
MET
Éireann

HIRLAM 12:00 16th November – VT 15:00 17th November



MET
Éireann

Storm Barney – 17th November 2015



Harmonie 12:00 16th November – VT 15:00 17th November

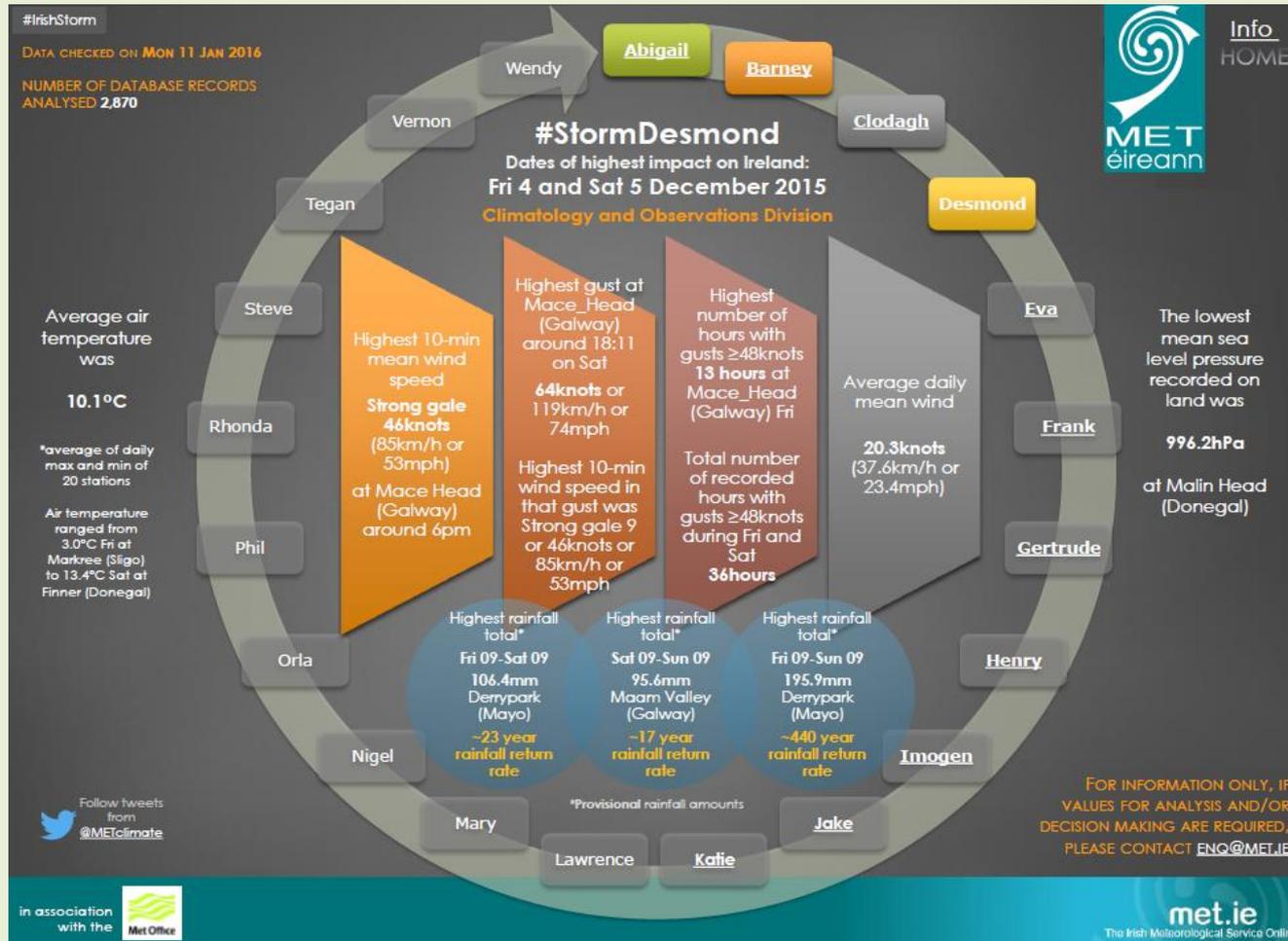


Storm Barney – 17th November 2015

ECMWF deterministic forecast

- was consistent from 14th November
- Forecast position and timing of depression accurately
- Underestimated the strength of wind over land
- High resolution limited area models seem to forecast wind speeds more accurately in extreme events.

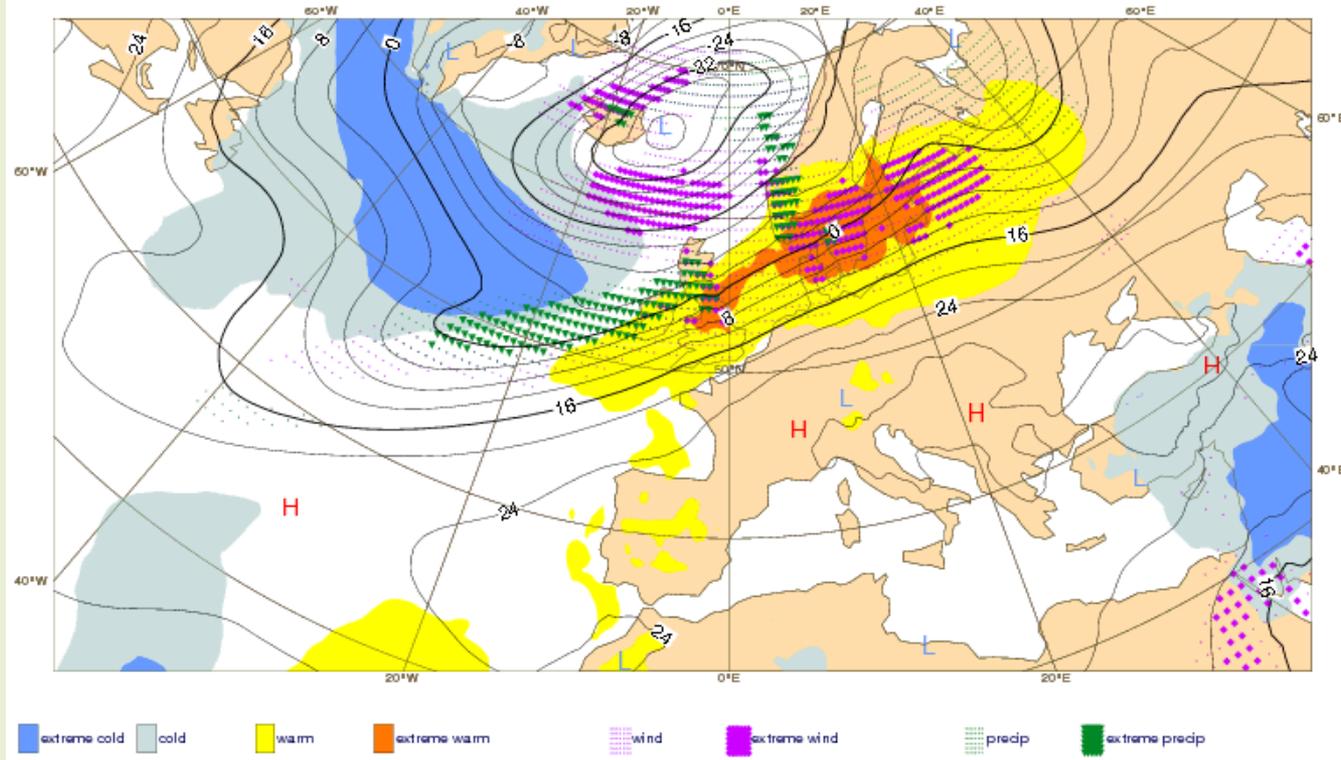
Storm Desmond – 4th, 5th November 2015



Met Eireann Climate & Observations division

Storm Desmond – 4th, 5th November 2015

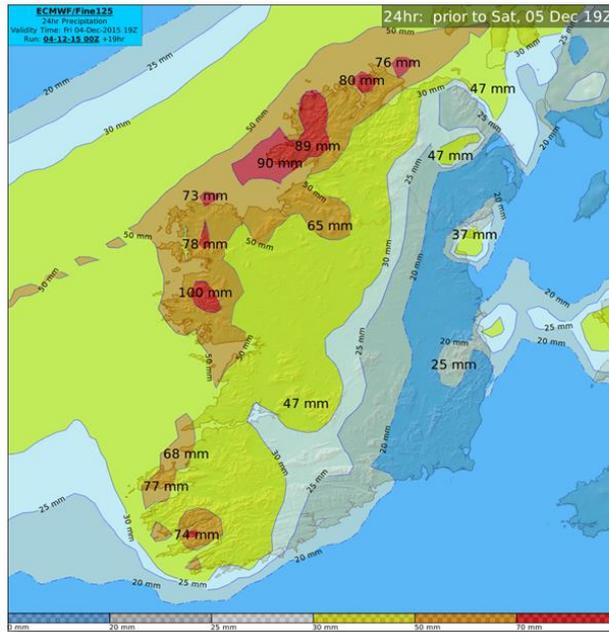
Anomalous weather predicted by EPS:Thursday 03 December 2015 0000 UTC
1000 hPa Z ensemble mean (Saturday 05 December 2015 1200 UTC)
and EFI values for Total precipitation,maximum 10m wind gust and mean 2m temperature (all 24h)
valid for 24hours from Saturday 05 December 2015 0000 UTC to Sunday 06 December 2015 0000 UTC



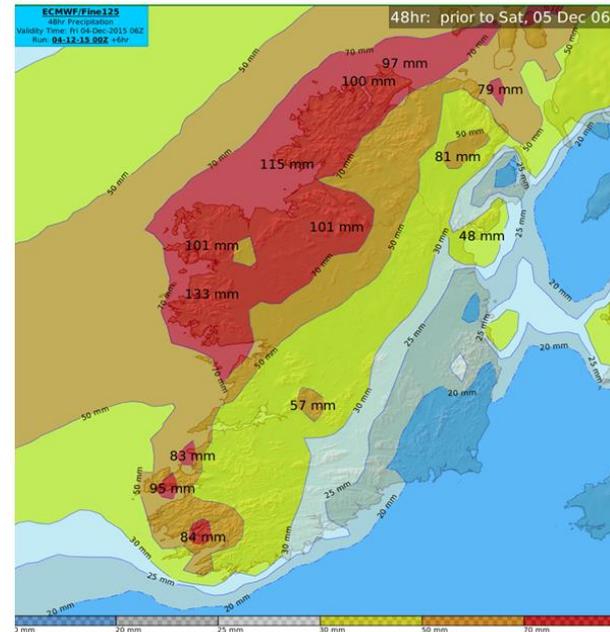
ECMWF EFI 0000 3rd December 2015 – VT 0000 UTC 5th to
0000 UTC 6th December

Storm Desmond – 4th, 5th November 2015

European Centre for Medium Range Forecasts (ECMWF)



(a)

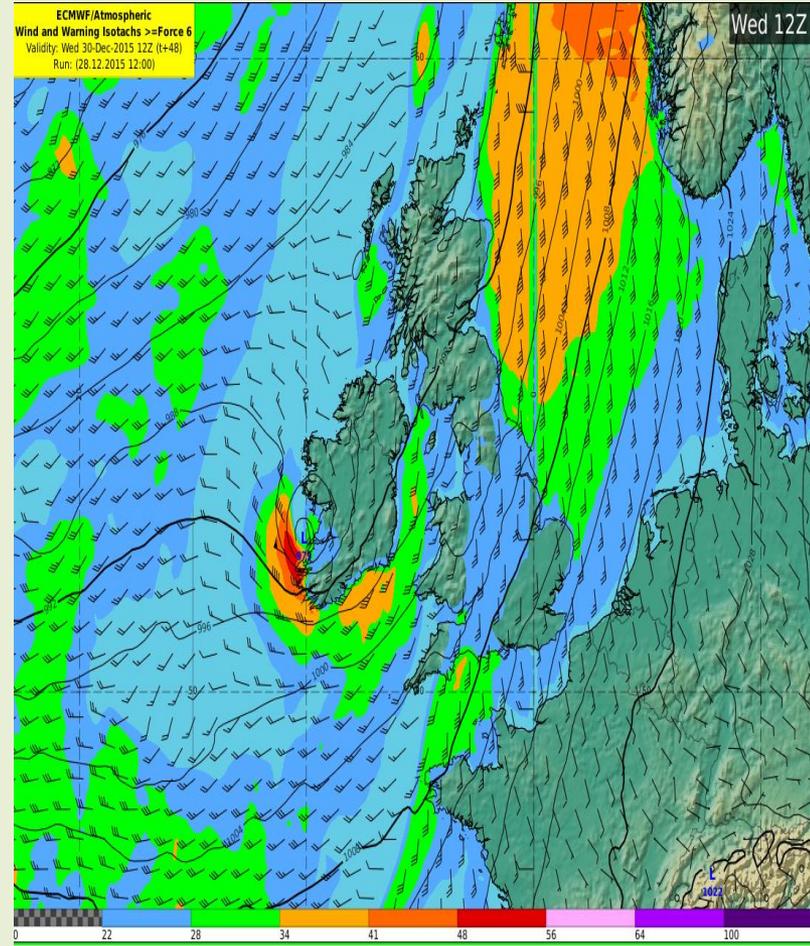
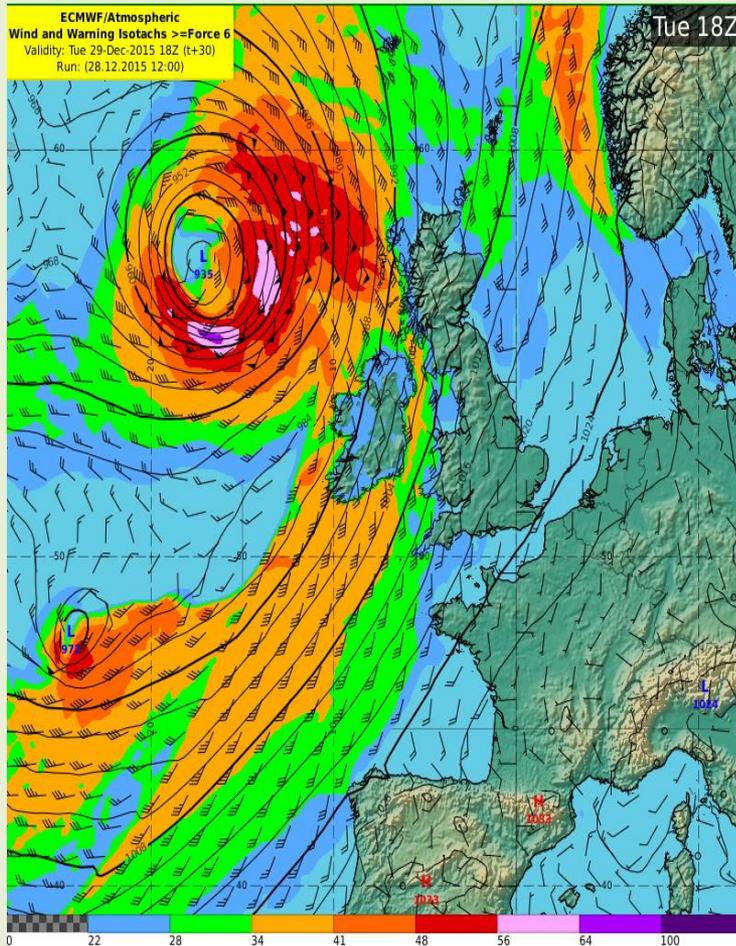


(b)

Figure 11. ECMWF forecast precipitation Run 00Z 4 December 2015 (a) 24hr (b) 48hr

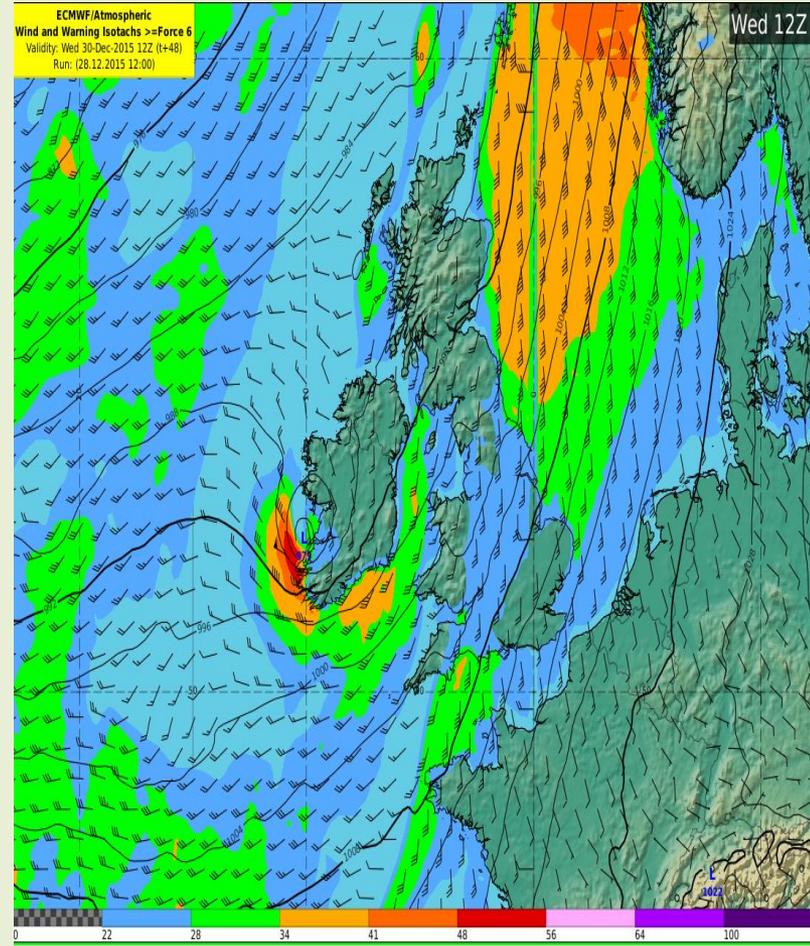
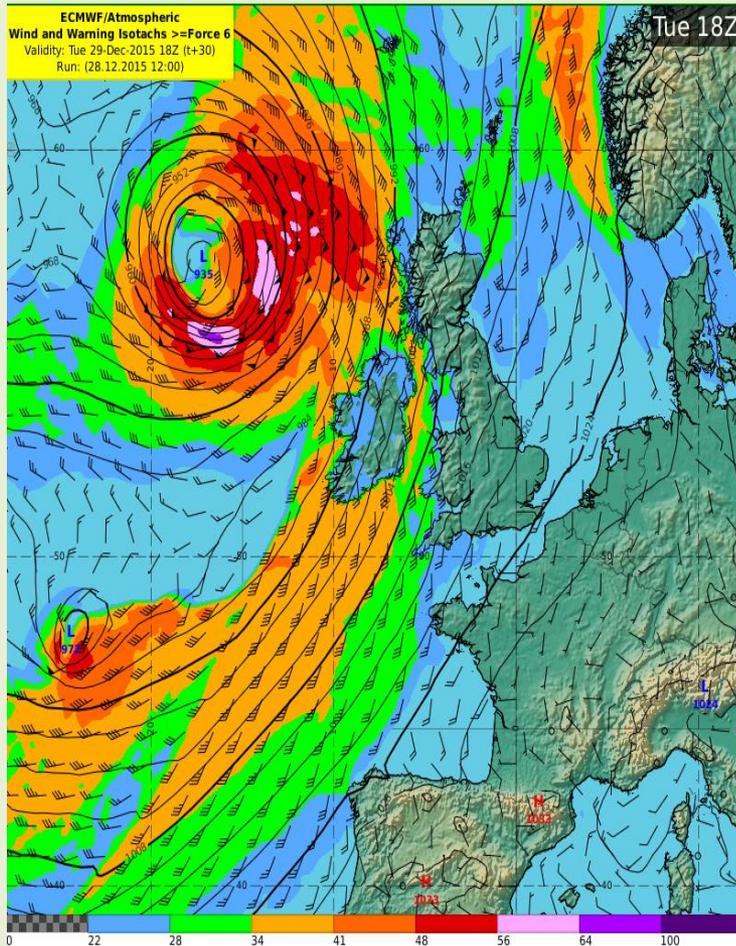
ECMWF EFI 0000 3rd December 2015 – VT 0000 UTC 5th to
0000 UTC 6th December

Storm Frank – 29th, 30th December 2015



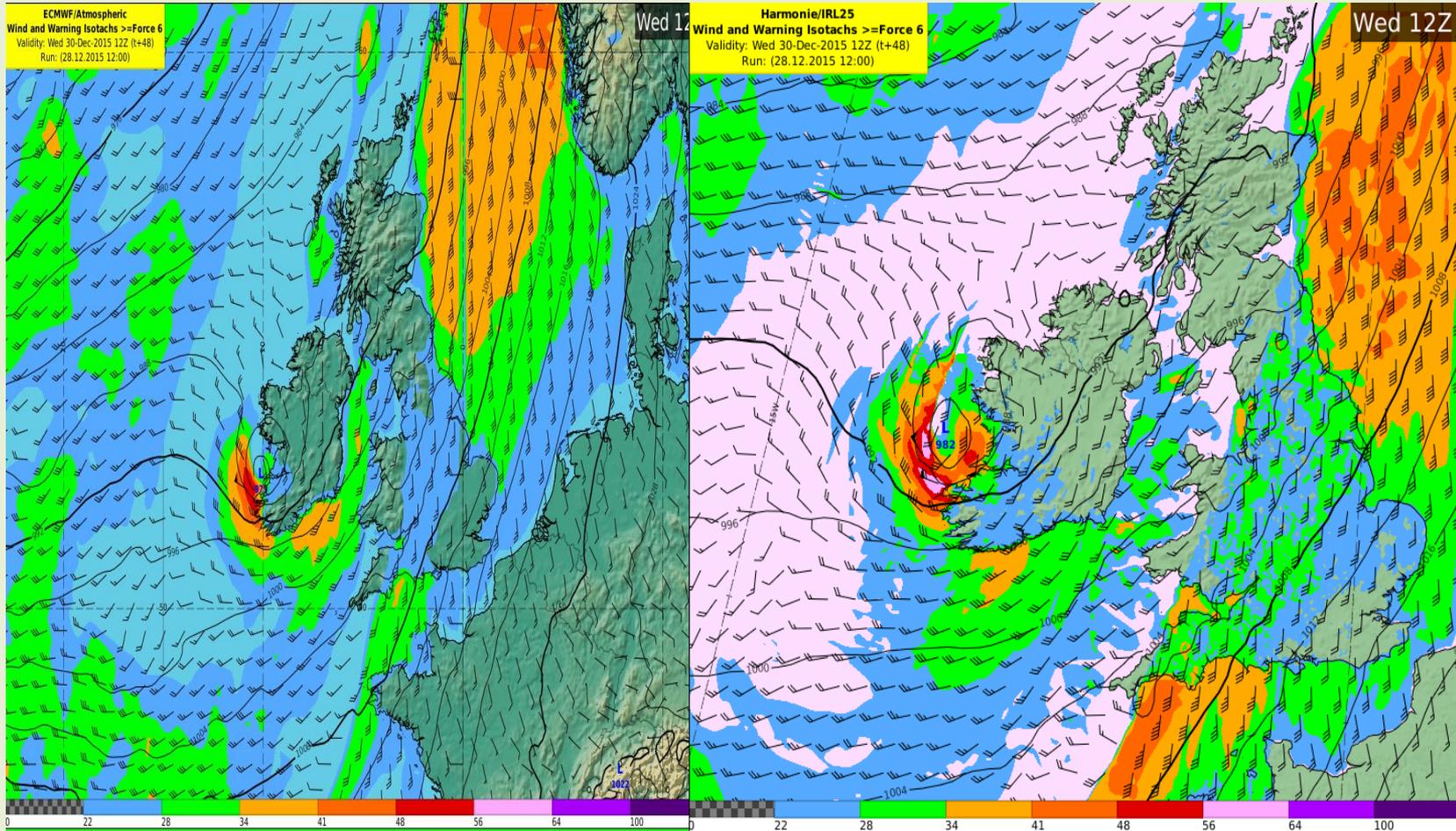
ECMWF 12:00 28th December – VT 12:00 29th, 30th December

Storm Frank – 29th, 30th December 2015



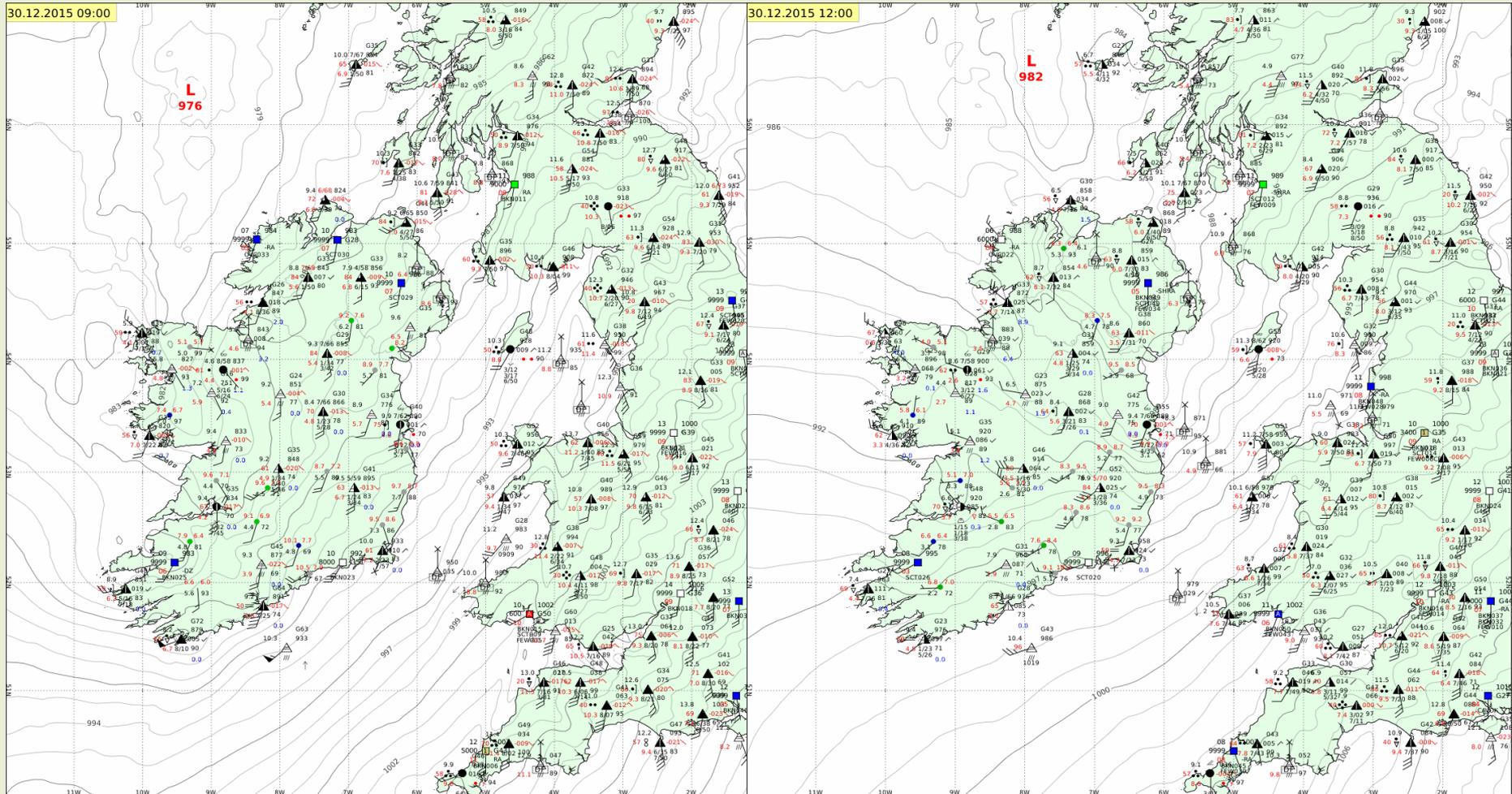
ECMWF 12:00 28th December – VT 12:00 29th, 30th December

Storm Frank – 29th, 30th December 2015



ECMWF & Harmonie 12:00 28th December – VT 12:00 30th
December

Storm Frank – 29th, 30th December 2015



Observations at 0900 & 1200 UTC 30th December



Conclusions

- In general ECMWF forecasts were very good over winter 2015 – 2016
- Ensembles very useful and necessary.
- Deterministic still used primarily close to event (in conjunction with Limited area models)
- ECMWF tends to underestimate wind speeds in extreme events
- Sometimes ECMWF can be a bit slow regarding timing.

Comments on Ensemble vs deterministic

- When a forecaster has to make a decision to name a storm, there is a strong tendency to use the deterministic model
- When the storm is named, there is no going back
- The media and the public don't care about probabilities.

Comments on Ensemble vs deterministic

- Graphically deterministic is more attractive
- Culturally, deterministic is the established practice

Conclusions

- Naming of storms in winter 2015 – 2016 had the desired effect in that it raised public awareness of approaching storms
- Enhanced the communication to public regarding approaching storms
- Very good co-operation between Met Eireann and UKMO forecasters. Hopefully will lead to further co-operation in this and other projects

Storm Clodaghth December 2015

- **Forecast User**
- 201511 - Windstorm - Gorm / Nils II / Clodagh (Ireland, UK, Denmark, Sweden)
- Is there a case for a European storm naming system