

MINUTES
PWSCG (53) Meeting
10:00 – 17:00 27th April 2022
Hybrid meeting

Attendees

PWSCG Members		BEIS and Met Office	
Duncan Potts (DP)	PWSCG Chair	Sarah Davies (SD)	PWSCG Secretariat (BEIS)
Kim Shillinglaw (KS)	Independent Member	Paul Riches (PR)	PWSCG Secretariat (BEIS)
Andy Wells (AW)	Civil Aviation Authority	Eli Johnson (EJ)	PWSCG Secretariat (BEIS)
Eleanor Clarke (EC)	Maritime and Coastguard Agency	Penny Endesby (PE)	Met Office
Ross Baird	Scottish Government	Alison Wood (AW)	Met Office
Andy Brown	Environment Agency	Lisa Martin (LM)	Met Office
Seb Lawrence (SL)	Cabinet Office	Ian Belcher (IB)	Met Office
Ben Brook (BB)	Warwickshire Fire and Rescue Service	John Harrison (JH)	Met Office
Agostinho Sousa (AS)	UK Health Security Agency (UKHSA)	Will Lang (WL)	Met Office
Ian Collins	Local Government Association (LGA)	Mike Gray (MG)	Met Office
Des McFarlane (DM)	Department for Infrastructure Northern Ireland	Patrick Sachon (PS)	Met Office
		Ian Cameron (IC)	Met Office
Apologies			
-	Welsh Government	David Gibbs	Civil Aviation Authority
Matthew Steele	MOD	Shaun West	Avon and Somerset Police
Gemma Cox	Highways England	James Partington	BEIS
Peter Davison	Ministry of Housing, Communities and Local Government	Jim Baird	Scottish Government

Actions

	Owner	Action	Date
1.	WL	Met Office to work with Scottish DA representative to ensure that they are linked in on community resilience work for MS1.1b.	By 31 st May
2.	WL & SL	Met Office and the CCS at Cabinet Office to discuss the system of resilience and in the face of increasing challenges. CCS to take this back to teams within their department.	By 30 th June
3.	LM & AB	The EA and Met Office to share resources on work investigating communication of warnings.	Ongoing
4.	LM	Met Office to consider how to link up more widely with a range of partner organisations to ensure consistent messaging and standardised communication.	To feed into Citizen Engagement Strategy
5.	LM, WL & SD	The secretariat and Met Office to work together to ensure that the communication of short notice warnings are reviewed; review inclusion of this within the CSA for '22-'26.	By 31 st May for CSA
6.	AB & LM	Met Office and the EA to follow-up to discuss including water quality information on the beach forecast service.	By mid-July
7.	BEIS & Met Office	Future papers to include deliverability information reflecting on cost and implications of work pieces for resources.	From now on
8.	WL, AS, RB, AB	Met Office, UKHSA, SEPA, and the EA to discuss MS2.1b and share learnings and perceptions of accuracy.	By mid-July
9.	WL	Groups to feed back to Cabinet Office that centralised input from them could help to support joined-up approaches to communication.	By mid-June
10.	BEIS secretariat	Add an agenda item to October 2022 PWSCG meeting to offer opportunity to revise Theme 3 as needed in October.	At Oct PWSCG
11.	SD	SD to follow-up and send request on PWSCG priorities.	By mid- May
12.	BEIS secretariat	Secretariat to include an accuracy roadmap update to the PAG2 agenda, with interim updates to be included in the PWSCG October meeting paperwork whilst there are HPC delays.	For PAG2

Decisions

Requirement	Decision
Sign off Theme 1 PMs	The PWSCG agreed that the PMs for Theme 1 '21-'22 had been met
Agree increased targets for Theme 1 PM for '22-'26 CSA	The targets for performance on accuracy of warnings should be increased to 80% in the '22-'26 CSA.
Sign off MS1.1b	The PWSCG agreed to sign off MS1.1b and would like to hear further information on the trial.
Sign off MS1.2b	The PWSCG agreed to sign off MS1.2b and would like to hear further information on the implementation and roll out of this work.
Sign off MS1.2c	The PWSCG agreed to sign off MS1.2c.
Sign off MS1.4a	The PWSCG agreed to sign off both parts of MS1.4a.
Sign off MS1.1a	The PWSCG agreed to sign off MS1.1a.
Sign off MS1.3a	The PWSCG agreed to sign off on MS1.3a, but require more information on future of hazard manager and associated costs of this.
Sign off MS1.3b	The PWSCG agreed to sign off direction of travel for MS1.3b.
Sign off Theme 1	PAG 1 milestones and metrics agreed and signed off.
Sign off MS2.1b	The PWSCG agreed to sign off direction of travel for MS2.1b.
Sign off MS3.6b	The PWSCG agreed to sign off direction of travel for MS3.6b.
Sign off CSA for 2021-2022	The PWSCG agreed to sign off the CSA as delivered for 2021-2022.

1. Met Office colleagues joined the meeting

- DP welcomed new members to the group.

2. Updates and reports

3. a. BEIS update (PR)

- The outcome of the recent Spending Review was a good outcome for the Met Office. The bid that was put forward for the Met Office was secured, with just over £100m for PWS in 22/23. It is a three-year settlement which offers some certainty for future years.

- Future years show an increasing profile which is largely due to the increase in international subscriptions linked to EUMETSAT satellite programme.
- SoS launched a new set of priorities last year, and still a focus for the department. BEIS has refreshed its vision. The priorities are to focus on Enterprise, Net Zero and Innovation (ENZI).
- Horizon research funding programme is the forefront of work within BEIS. Association to Horizon Europe is still the aim, but BEIS is considering alternative programmes of work if we are unable to associate.
- The BEIS team are seeking to secure a visit to the Met Office for Minister Freeman.
- We would welcome more members in person at the next PWSCG meeting.

3. b. Chair's update (DP)

- DP's term as chair has been dominated by Covid, but has had a successful year as detailed in the Chair's report.
- Main theme of this year has been increasingly on reach and engagement, but also on all types of accuracy (actual, relative, perceptions of).
- The supercomputer is important for the tempo and pace at which we can make improvements.
- DP finished by welcoming all new members to the PWSCG.

3. c. Independent Member's update (KS)

- Have been working closely with the Met Office on the new Citizen Engagement Strategy. Some real strategic clarity being developed on the reach and engagement elements of PWS outputs. A work in progress, but it is a very important piece of work.
- The most recent MARG meeting saw huge appreciation for the steps that the Met Office have taken in regard to transparency and sharing their workings, particularly in regards to late notice and severe weather events. Appreciation also for the fake news initiative, and many good outcomes from the PPS as well as a couple of areas for us to keep an eye on. Important to note that BME groups are significantly less likely to access NSWWS so more work is needed there.
- The LGA reiterated the positive feedback on late notice warnings and the transparent communication.

3. d. Met Office update (PE)

- A successful year for the Met Office; majority of PWS and corporate targets have been met, and there is now much more overlap between PWS and corporate targets thanks to DP's leadership. There are important services which are performing above target too.
- Spending Review outcome for the Met Office has been positive; the underpinning capabilities also received good settlements which has a positive impact on PWS and sustaining services.
- There are running cost challenges associated with electricity, salary, commodities. The Met Office has also been impacted by the buoyant jobs market. Operating without any slack in terms of staff numbers.
- Recognise the importance and success of the heat warnings, the run of severe winter weather and the work going on to support Ukraine and international sanctions.
- There is a 1-year delay to the supercomputer programme, timelines are being formalised at the moment. Inevitably that will delay some of the step changes and improvements, although the executive are working through contingency plans. There are improvements which can and will be made in the meantime, through post processing and improvements in consistency but there may be wider impacts on underpinning services. Use and maintenance of the existing machine has been secured until the new supercomputer comes online. Revised timescales within a month and this will be communicated via a

formal stakeholder document. The Secretariat will share this with the membership when available.

- European programmes remain a concern to the Met Office due to the ongoing delays in formalising the UK's Association, these are being worked through.
- The Met Office is being reviewed as part of the government's Arm's Length Bodies review during summer and autumn this year.

3. Review of this year's weather & warnings (WL)

- Performance for the year dipped during the summer as certain seasonal weather conditions e.g. convective scenarios can be harder to predict, but overall doing well and performing above target. Met Office recommend that we implement an increased target of 80% from 2022 to ensure continued strong performance. This was agreed by the membership
- Winter weather was in line with the long-range forecast and predicted impacts of La Nina.
- WL recognised that the warning imagery for the UK can be challenging to interpret.
- Reviewed Storm Eunice; the second red warning was issued at very early in the morning, but was received well and taken seriously when it was issued. Flood guidance and Met Office warnings were not entirely joined up for this storm, and work has been initiated to improve this.
- The week with three storms posed a massive challenge for the Met Office Civil Contingency Advisor team; with over 300 teleconferences attended by the team within 5 days. Demands on resilience team are becoming greater across the board, The Met Office are thinking about how they can embed surge support within the team to deal with extreme events, both internally and with partners.
- SL from the CCS reflected that join up was better with Eunice than Arwen, but more discussion can be had to reflect how organisations work together.
- The group discussed that communication of red warnings for wind was challenging due to the sunny weather; the Met Office are working to refine the context and communication of warnings.
- The EA as an organisation felt that Eunice and Franklin were the best forecast issued in recent times. The LGA also recognised the huge effort of work during this series of storms. The Scottish Government and the resilience community in Scotland also registered their recognition and gratitude for WL and the Met Office teams for their work during these storms, noting their excellent collaboration, advice and support over a busy and difficult time.
- A cross government approach could be taken to improve the structure of support during these periods, with organisations of the PWSCG (The EA, the LGA, and the SG) offering support for the Met Office during challenging periods. These organisations offered to take conversations on this offline.
- The LGA asked whether more radical changes such as regional meetings could be implemented.
- DP reflected that public awareness and action taken were high for these events, another successful point to note.

4. RAG Review of Theme 1 performance measures and milestones (EJ)

- EJ reviewed performance on Theme 1 of the CSA during '21-'22 which has been strong. There are two performance measures (PMs) which have both performed above target. All milestones have been delivered on time, with a number of these due for sign off at this meeting.
- The Met Office would like to raise their target for accurate warnings to 80% in the '22-'26 CSA to continue to provide challenging targets. The group are confident that better

teamworking, forecasting and modelling mean that it is the right time to increase targets and it is important to keep the team on their toes. Dips down can happen and should be expected, but it is important to keep targets challenging. This increase in target was agreed.

- The PWSCG agreed that the PMs for Theme 1 '21-'22 had been met, and that the targets for performance on warnings should be increased.

Decision: The PWSCG agreed that the PMs for Theme 1 '21-'22 had been met

Decision: The targets for performance on accuracy of warnings should be increased to 80% in the '22-'26 CSA.

5. Review theme 1 milestones for signoff

6. a. MS1.1b, Strategy to increase engagement with Community Resilience Groups (WL)

- Discussion around community resilience important and reflects the national resilience strategy which has a big focus on community.
- Recommendations to engage more widely with different groups, include opening up Met Office responder training programme to these groups which is now online and much more scalable, controlled and limited opening up for hazard manager, and a pilot test with community resilience within the LRF.
- The Met Office need to consider how the pilot test will be measured for success.
- There is a risk that new relationships following training put more demand on Met Office resilience services; there is to be thinking done about managing this risk.
- The Met Office also need to recognise the importance of staying engaged with businesses and Category 2 responders.
- Scottish DA representative would like to engage with this work and tie in resilience across the UK.

Action: Met Office to work with Scottish DA representative to ensure that they are linked in on MS1.1b work.

- The group discussed the need to review the whole resilience network across the UK and how resources are managed across organisations. The Met Office could engage with work with CCS at Cabinet Office on developing this work.

Action: Met Office and CCS at Cabinet Office to discuss the system of resilience and in the face of increasing challenges. CCS to take this back to teams within their department.

- The group agreed that the focussed pilot study is important to establish how increased engagement will work and would welcome reporting on this to hear lessons learnt.

Decision: The PWSCG agreed to sign off on MS1.1b and would like to hear further information on the trial. The secretariat will feed back to the group after year 1.

6. b. MS1.2b - Improve the context and advice in warnings (LM)

- Context and advice within Met Office warnings require improvement. People confuse and conflate likelihood and impact information and want to be given advice statements which this should be part of the warning system itself. Need to have 'what to expect' aligned with 'what should I do' in the same location. More testing to be done within the process of implementation if PWSCG agree to this recommendation.
- The EA are doing early-stage work on potential ideas for flood warning codes and doing some research with cantor on content of warnings and how they are communicated. This can be shared with the Met Office once this is done, and the Met Office will share the outcomes of this work with the EA.
- **Action:** The EA and Met Office to share resources on work investigating communication of warnings.
- The Met Office agreed that it is important in how to roll this out with authority and consistency across partners and platforms, and will do more work to develop an

implementation plan. The PWSCG group would like to stay informed on this important work.

- The UKHSA and Met Office are working together on shared messaging, and work should be done to promote this streamline of messaging more widely to standardise messages across platforms and organisations.

Action: Met Office to consider how to link up more widely with a range of partner organisations to ensure consistent messaging and standardised communication.

Decision: The PWSCG agreed to sign off on MS1.2b and would like to hear further information on the implementation and roll out of this work.

6. c. MS1.2c - Short notice warnings (WL)

- This work represents an improvement to existing nowcasting services, which will be improved on in the future. There will be more engagement with partners to ensure that they are ready for short notice outputs, and more testing will be done on this prior to the convective season. This is not the end product, nowcasting is being built into more services, but this is a steppingstone to nowcasting services being used more frequently.
- The evolved way of working needs to be worked through to make sure system chains are ready to work within this context, as reflected by the EA.
- Nowcasting of convective rain events is a huge risk to the UK population, particularly London where there is vast underground infrastructure liable to flooding. It is important to expand the alert service so that short notice warnings are widely disseminated with maximum reach. Important to get rollout of this service right, which may slow down the rollout.

Action: The secretariat and Met Office to work together to ensure that the communication of these short notice warnings are reviewed; review inclusion of this within the CSA for '22-'26.

Decision: The PWSCG agreed to sign off on MS1.2c.

6. d. MS1.4a - Ways to increase long range outlook to 6 months and ways to improve safety information

- Ways to increase long range forecasts: the Met Office need a proactive handling plan for when this information may be leaked.
- Ways to improve safety information: users are unaware that beach forecasts exist and are available, users misunderstand the beach forecasts available to them but when they were aware of it they noted that this information would encourage them to change their behaviour. Mountain forecasts are better serviced, but there is a need for these forecasts to be available on the app.
- The MCA support this work on safety forecasts and the recommendations.
- The Met office noted that finance budget is available for work on safety forecasts, but that implementation in terms of personnel resource is more challenging.
- The Met Office believe that this work is aligned to the Citizen Engagement Strategy, as there is a clear need for these services within the Met Office for people who are not experts.
- Met Office agreed that there is the opportunity to link this work with forecasts such as water quality from other partner organisations.

Action: Met Office and the EA to follow-up to discuss including bathing water quality information on the beach forecast service.

Decision: The PWSCG agreed to sign off on both parts of MS1.4a.

6. e. PWSCG questions for other Milestones requiring signoff: MS1.1a, MS1.3a, MS1.3b (SD)

- MS1.1a: Quarterly paper outlining Civil Contingencies Advisor activities and customer feedback.

Decision: The PWSCG agreed to sign off on MS1.1a.

- MS1.3a: Explore options for developing current Hazard Manager IT system to integrate with other IT systems.
- There are costs associated with this, but also multiple requests for new types of information. This milestone is agreeing the direction of travel, with more updates in future on cost and implications. Deliverability of these pieces of work are important to reflect on.

Action: Future papers to include deliverability information reflecting on cost and implications of work pieces for resources.

Decision: The PWSCG agreed to sign off on MS1.3a, as a direction of travel for the Met Office in terms of using API's more in any future HM update MS1.3b: Investigate options to upgrade the Daily Hazards Assessment (DHA).

- This will be challenging as it requires agreement and funding from other partners; this is a request to agree direction of travel with more updates to be provided on this work. This will go back to the national hazards partnership (NHP) if agreed.

Decision: The PWSCG agreed to sign off MS1.3b. as a direction of travel for future improvements.

6. Review signoff for PAG1 Milestones (SD)

Decision: PAG 1 milestones and metrics agreed and signed off.

7. PAG reports – comments and questions from PWSCG (SD)

a) PAG 2

- No comments or questions.

b) PAG 3

- No comments or questions.

c) PAG 4

- No comments or questions. Three separate **MOSAC papers were circulated to the group with the meeting papers:**
 - Report of the 26th Met Office Scientific Advisory Committee Meeting (17-21st January 2022)
 - MOSAC 26 and SRG 18 Meetings - Met Office operational weather forecast performance metrics 2020/21
 - Summary of ESTO 2.2 Forecast Accuracy KPI for FY 2021-22

8. PWSCG questions on Milestones not presented at meeting (MS2.1b & MS3.6b) (LM)

- MS2.1b: Make improvements in communicating weather for perceptions of accuracy. The secretariat confirmed that perceived accuracy will move to Theme 3 within the '23-'26 CSA. Dip in perceived accuracy this year is reflected in previous results and this needs to be interpreted within the context of Covid, and targets are more challenging this year.

- This work is important across the board and learnings could be shared across groups. Cabinet Office could support this work to join up more centrally.

Action: Met Office, UKHSA, SEPA, and the EA to discuss this work, share learnings and perceptions of accuracy.

Action: Groups to feed back to Cabinet Office that centralised input from them could help to support joined-up approaches to communication.

Decision: The PWSCG agreed to sign off direction of travel for MS2.1b

- MS3.6b: Implement a reporting structure to ensure that broadcast media satisfaction remains or improves. PWSCG reflected that this work is needed and useful. There is some way to go to offer a premium service to certain customers and users. Citizen Engagement Strategy will support this work strategically by helping to define the

importance of indirect reach. Important to reflect that response rates are low for surveys, but the MARG play a role in representing this ecosystem where possible.

Decision: The PWSCG agreed to sign off direction of travel for MS3.6b. The secretariat will share the reports as they become available.

9. PWS BEIS and Met Office annual reports – review of milestones and metrics, questions from PWSCG (EJ & AW)

- EJ reflected that this year The secretariat have focused on embedding the new CSA, supporting the Citizen Engagement Strategy, and developing the CSA refresh. EJ recapped performance report within the meeting pack, highlighting areas of work in Themes 2 and 3 that have finished the year on Amber. EJ described future priorities for '22-'23 for the secretariat.
- For the Met Office, the priorities have been delivering the new CSA, developing the Citizen Engagement Strategy, and supporting the CSA refresh. AW discussed performance, providing context to performance across the year as described within the performance report. AW described future priorities for '22-'23 for the Met Office.

10. Review and signoff of 2021-2022 CSA (SD)

Decision: The PWSCG agreed to sign off the CSA as delivered for 2021-2022.

11. CSA 2022-2023 update (SD)

12.a. CSA refresh – comments and agreement

- A number of acronyms need to be updated (e.g. PHE to UKHSA).
- Include new definitions of deliverables, performance measures within glossary.
- The group discussed whether the CSA should be agreed upon and refreshed mid-year following the Citizen Engagement Strategy being agreed. It was noted that the CSA is a contract, a refresh happens yearly and in-year amendments are possible. The secretariat will incorporate any changes following discussions here and with members by email and the CSA will be signed imminently. There will be an opportunity at the PWSCG meeting in October to make amendments if required. The Met Office and the secretariat will work to prioritise work that is unlikely to change pending outcome of the Citizen Engagement Strategy. It was noted that Met Office's expected change in status to a Category 2 responder could be reflected within the CSA in October too.

Action: Add an agenda item to October 2022 PWSCG meeting to offer opportunity to discuss any changes required to the CSA.

- The text should reflect that success in Theme 3 is dependent on success in themes 1 and 2.

12.b. Met Office Citizen Engagement Strategy (JH & AW)

- This strategy is an opportunity for the Met Office to build on their established capabilities within the 'stay safe' and bring out more 'thrive'.
- Important to think about whether economy, business or income should be in the top line as well as safety, health and lifestyle.
- There is a concern around investment in the app; despite prioritising indirect reach, trusted voice over time may be difficult to maintain without a best-in-class app that can reach everyone. The tension for the Met office is how to differentiate between the Met Office app and other applications, but it is seen as important for the Met Office. Allocation for continuous review of graphics and user interface is important to maintain excellence within the Met Office app.
- Underserved groups are discussed in terms of lifestyle and activity, but what about more traditional under-served groups? How do Met Office products get out to them and what in

the strategy will address that gap. Need to make sure that this strategy links up to the research ongoing on vulnerable groups and that they corroborate and support each other.

- Should be something about phasing of work that may carry budgetary implications in year one to do with indirect reach and partnership working. Need to link to lessons learnt and how to proceed.
- Partnerships with different Government agencies will be essential for engaging citizens. Some more detail on indirect reach via partnerships with governmental institutions needs to be included.

12. Other topics for discussion

13.a. Discussion of PWSCG priorities (SD)

- This item was not covered due to time. SD will follow-up via email and PWSCG members will be asked to reflect on their top three priorities.

Action: SD to follow-up and send request on PWSCG priorities.

13.b. Update on accuracy roadmap, PM2.1 (MG)

- DP thanked the Met Office for a very clear paper.
- Many aspects of Met Office work contribute to improving accuracy of PWS outputs; important to note that changes to the supercomputer implementation will impact this roadmap. The roadmap will be updated and shared yearly with the PWSCG with information as it becomes available.
- PWSCG members asked for more frequent updates than annual as the supercomputer timelines are finalised. The impact of supercomputer on this work may not be as large as there is a lot of implementation work that can be done in the meantime which will impact on forecast accuracy.
- The roadmap components could be shared more widely to stimulate interest outside of the core group. The roadmap was welcomed internally as a useful source of information.
- **Action:** Secretariat to include a roadmap update to the PAG2 agenda, with interim updates to be included in the PWSCG October meeting paperwork whilst there are HPC delays.

13. Supercomputer update – Impacts of any delays on outputs and delivery of PWS improvements or milestones

- One year delay in the supercomputer implementation plan, Cray are keeping the current supercomputer online.
- There are no near-term implications for PWS deliverables; PS45 implementation is not impacted by supercomputer delays.
- There are delays to implementation of day 14 forecasts, these timelines reflected within the CSA.
- The Met Office are trying to pull-through other developments that can be implemented instead (e.g. freezing rain in Hazard Manager).
- The Met Office will continue to provide updates which the secretariat will share with the group, but in the near term there are no impacts for PWS.
- The Met Office are confident that the delay will not continue to escalate. There are penalising clauses within the contract, and Microsoft are very positive that they will meet the new deadlines. The Met Office have been notified that they are high on the priority list for delivery for Microsoft.

14. AOB

- DP recorded his thanks for all attendees, the secretariat teams for their time at the meeting and efforts in preparing the meeting and documentation.

- The teams will better capture how we capture priorities, resourcing and deliverability within the papers in future, this has been noted as an action earlier in the meeting.