Final Webinar - Climate change impacts on offshore wind

Results from 2C NOW Joint Industry Project

2C NOW JIP

Key Numbers

18 months (Oct. 2023 – Apr. 2025)
€ 725K
First « 2C » project

Objectives

To provide the French OW sector with:

- Evolutions of wind resource and energy production
- Evolutions of design conditions
- Associated uncertainties

Partners

FRANCE ENERGIES MARINES
Le réseau de transport d'électricité
ÉCOLE NATIONALE DES PONTS ET CHAUSSÉES
INSTITUT POLYTECHNIQUE DE PARIS
Ifremer
EDF
SHOM
INNOSEA Part of OWC
skyborn

This project receives €366K French State funding managed by the National Research Agency under the France 2030 investment plan.

Agenda & Speakers

1 Context 5’

2 Impacts of CC on Wind Resource and Energy Production 20’

3 Impacts of CC on Structure Design 20’

4 Main Output Resources 10’

5 Industry insights 10’

6 Conclusion and Outlook 10’

7 Q&A Session

« Q&A » to ask questions that will be adressed during Q&A session

Agenda & Speakers

Context

Laurent Dubus (RTE, WEMC, ENTSOE)
2C NOW Scientific Manager

1 Context 5’

2 Impacts of CC on Wind Resource and Energy Production 20’

3 Impacts of CC on Structure Design 20’

4 Main Output Resources 10’

5 Industry insights 10’

6 Conclusion and Outlook 10’

7 Q&A Session

« Q&A » to ask questions that will be adresses during Q&A seesion

Agenda & Speakers

Impacts of CC on Wind resource and Energy Production

Boutheina Oueslati (OSIRIS, EDF R&D)
2C NOW WP Leader

1 Context 5’

2 Impacts of CC on Wind Resource and Energy Production 20’

3 Impacts of CC on Structure Design 20’

4 Main Output Resources 10’

5 Industry insights 10’

6 Conclusion and Outlook 10’

7 Q&A Session

« Q&A » to ask questions that will be adresses during Q&A session

Agenda & Speakers

Impacts of CC on Structure Design

Nicolas Raillard (LHYMAR, IFREMER)
2C NOW WP Leader

1 Context 5’

2 Impacts of CC on Wind Resource and Energy Production 20’

3 Impacts of CC on Structure Design 20’

4 Main Output Resources 10’

5 Industry insights 10’

6 Conclusion and Outlook 10’

7 Q&A Session

« Q&A » to ask questions that will be adresses during Q&A session

Agenda & Speakers

Main Output resources

Youen Kervella (France Energies Marines)
2C NOW Project Manager

1 Context 5’

2 Impacts of CC on Wind Resource and Energy Production 20’

3 Impacts of CC on Structure Design 20’

4 Main Output Resources 10’

5 Industry insights 10’

6 Conclusion and Outlook 10’

7 Q&A Session

« Q&A » to ask questions that will be adresses during Q&A session

Agenda & Speakers

Industry Insights

Cédric Dall'Ozzo (EDF Renouvelables)

1 Context 5'

2 Impacts of CC on Wind Resource and Energy Production 20'

3 Impacts of CC on Structure Design 20'

4 Main Output Resources 10'

5 Industry insights 10'

6 Conclusion and Outlook 10'

7 Q&A Session

« Q&A » to ask questions that will be adresses during Q&A session

Agenda & Speakers

Conclusion and Outlook

Laurent Dubus (RTE, WEMC, ENTSOE)
2C NOW Scientific Manager

1 Context 5’

2 Impacts of CC on Wind Resource and Energy Production 20’

3 Impacts of CC on Structure Design 20’

4 Main Output Resources 10’

5 Industry insights 10’

6 Conclusion and Outlook 10’

7 Q&A Session

« Q&A » to ask questions that will be adresses during Q&A session

2C NOW webinar

Context

Laurent Dubus (RTE), Scientific Manager

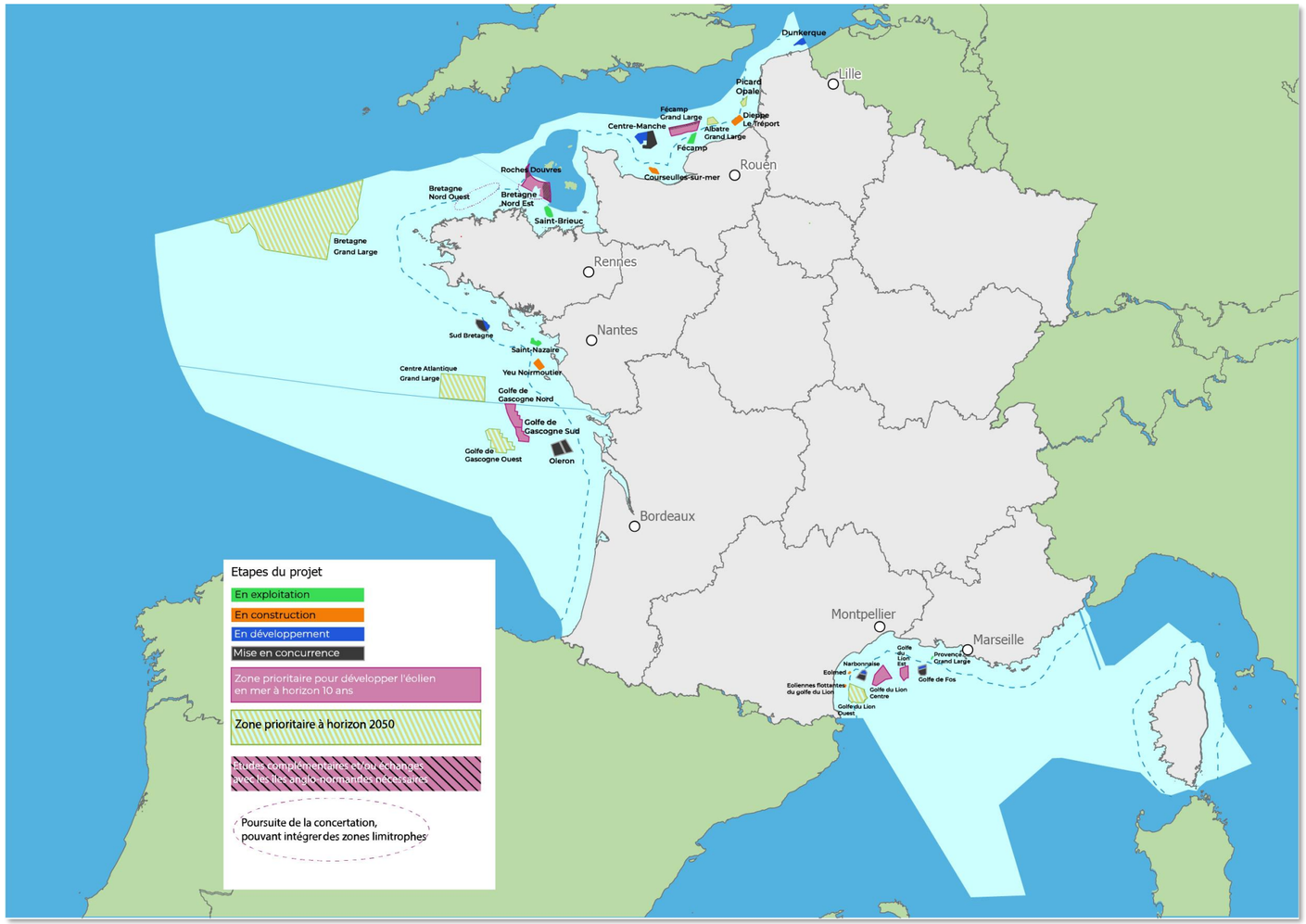
Context

Objectives announced in 2022:

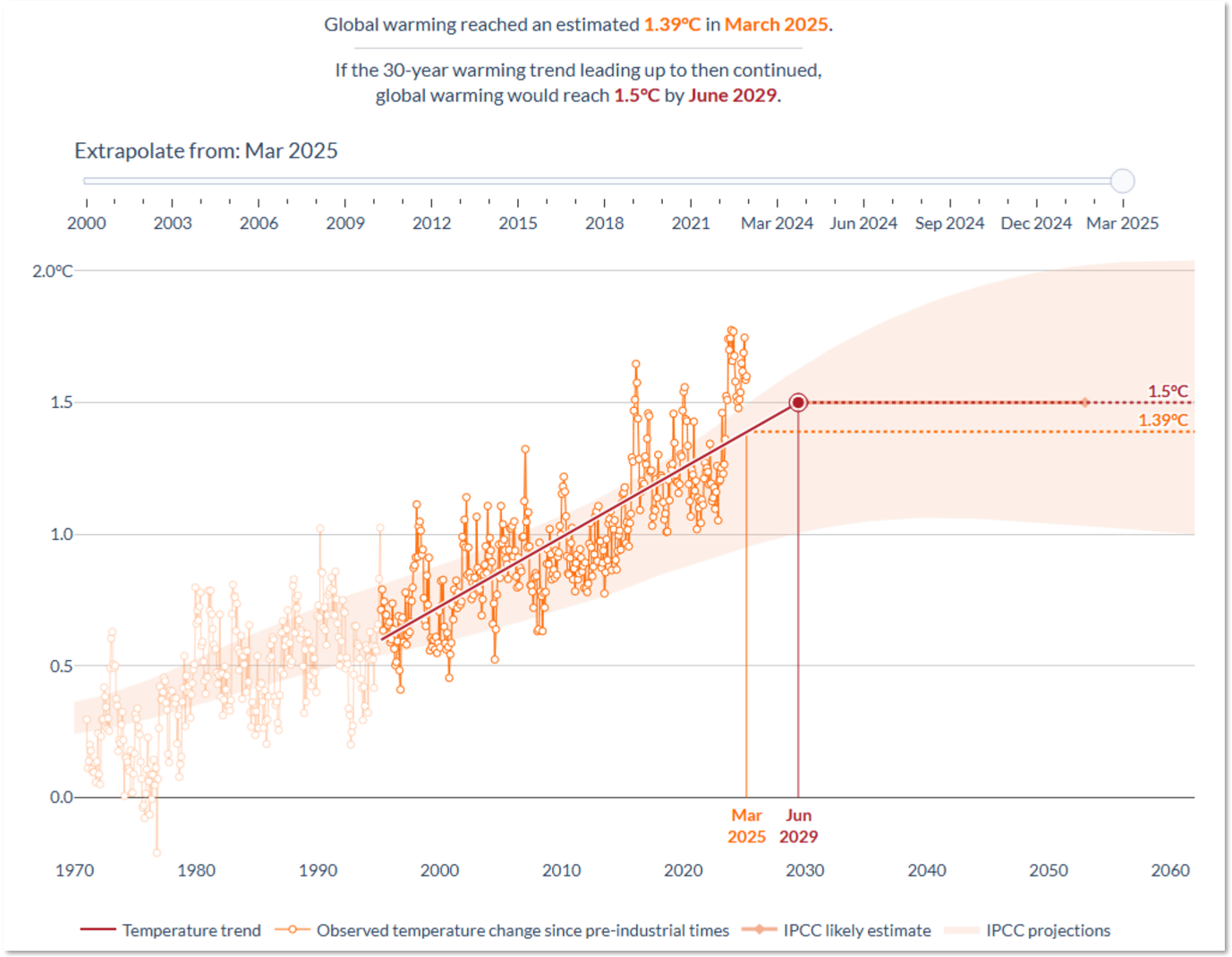
- a target of 50 wind farms in operation, representing 40 GW installed by 2050
- a target of 2 GW allocated per year from 2025 and 20 GW allocated by 2030

On June 12, 2023, the government published a deployment trajectory for offshore wind power, forecasting the commissioning of 45 GW by 2050

These guidelines are intended to be translated, adapted and specified during the next energy production law and the revision of the PPE scheduled for 2025.



Context



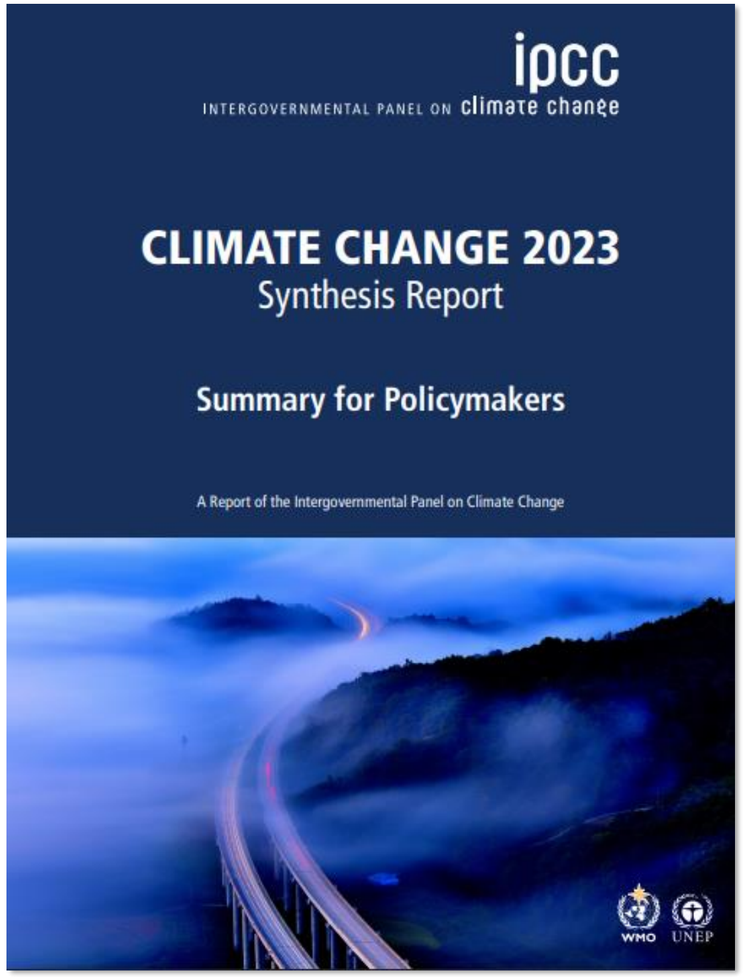
Earth's climate is changing

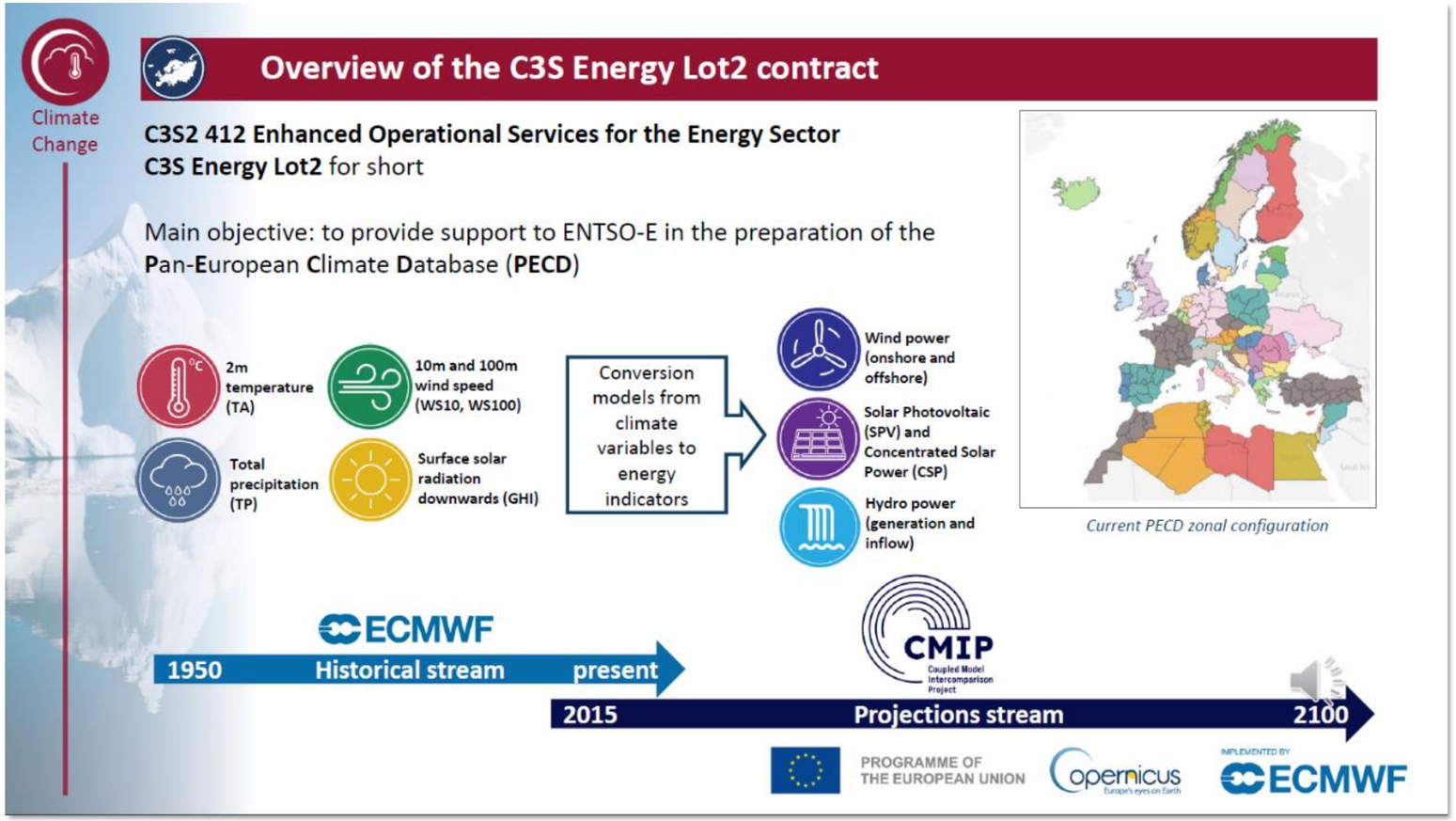
➔ what are the impacts on wind and metocean conditions, and implications for offshore wind farms, and related infrastructure?

Global mean monthly temperature anomaly with respect to the pre-industrial average (1850-1900)

From the C3S global temperature trend monitor

Context





PROGRAMME OF THE EUROPEAN UNION
opernicus
Climate Change Service
IMPLEMENTED BY
ECMWF

Context

Methodology deployed in 2C NOW

A significant step forward in 2CNOW : using climate projections to estimate climate change impacts on the full operational chain, from wind resource to turbines design and power generation