

GHOSTOR Beirat  
Sept. 26<sup>th</sup>, 2023  
Hamburg University



**GHOSTOR**

# Agenda

11:00 – 11:30	Koordination und Öffentlichkeitsarbeit
11:30 – 12:00	Geologie
12:00 – 12:30	Recht, Raumplanung, Technik
<b>12:30 – 13:45</b>	<b>Mittagessen</b>
13:45 – 14:15	Umweltrisiken
14:15 – 14:30	Monitoring
14:30 – 15:00	Konzept 2. GEOSTOR-Phase
15:00 – 16:00	Abschlussdiskussion

An underwater photograph of a rocky seabed. The water is clear and blue-green. The rocks are smooth and rounded, scattered across the bottom. A semi-transparent, rounded rectangular overlay covers the top half of the image, containing the title text.

# Report: TP1 Project coordination

Klaus Wallmann, Kristin Hamann  
GEOMAR

# Report TP 1



- KSpG evaluation report
- Carbon management strategy
- CDRmare/DAM activities
- Public outreach

# KSpG evaluation report

Evaluation report for KSpG published in Dec. 2022 by DENA (with input from BGR).

Excellent overview on the state-of-the-art for CCS in Germany and Europe, link:  
[Deutscher Bundestag Drucksache 20/5145 --- Evaluierungsbericht der Bundesregierung zum Kohlendioxid-Speicherungsgesetz](#)

Major outcomes and recommendations:

- CCS is probably needed to reach net-zero in Germany by 2045
- London protocol should be signed to allow for CO<sub>2</sub> export
- Research project on environmental risks should be conduct
- National carbon management strategy needs to be developed to validate role of CCS

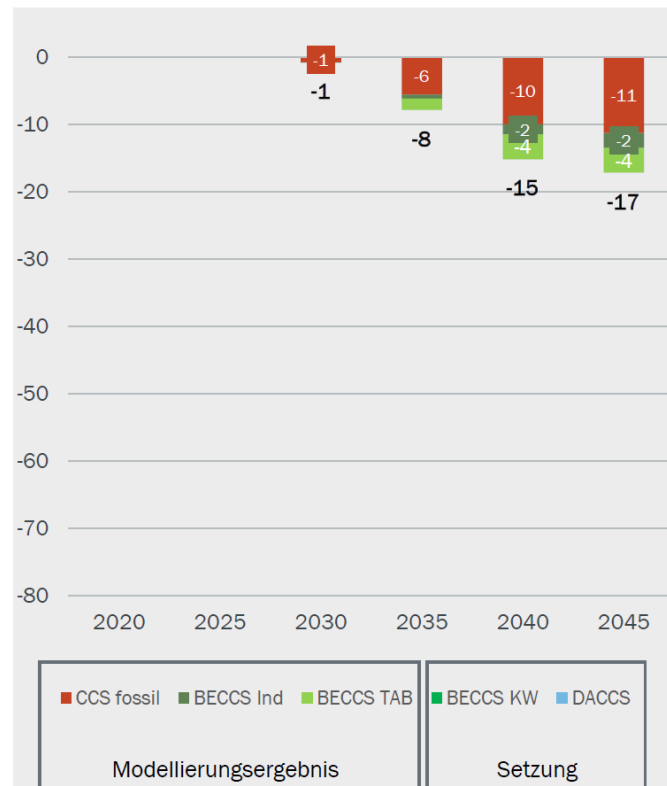
# Carbon management strategy

- Excellent stakeholder dialogue on strategy with NGOs, academia, federal agencies, industry, and policy makers organized by DENA and BMWK.
- Several meetings of stakeholder board (Oct. 18<sup>th</sup> – 19<sup>th</sup>, 2022, March 24<sup>th</sup>, April 20<sup>th</sup> – 21<sup>rd</sup>, June 14<sup>th</sup>, June 29<sup>th</sup> – 30<sup>th</sup>, Aug. 16<sup>th</sup>, Aug. 29<sup>th</sup>, 2023) in Berlin (BMWK) and online with GEOMAR and BGR participation and presentation of GEOSTOR results
- Additional online meetings with DENA to discuss regulations for offshore storage
- Strategy is almost completed and will soon be published by DENA
- Next steps: Federal government and parliament will discuss strategy report and probably update KSpG to regulate CO<sub>2</sub> storage and CCS in Germany

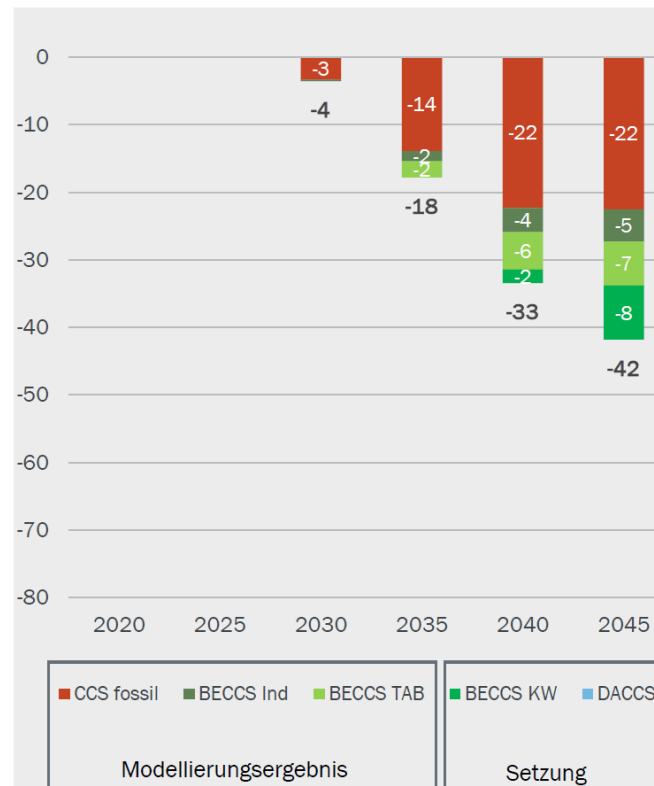
# Carbon management strategy

Model study by Prognos (2023) for carbon management strategy: CCS to be applied to reduce emissions from cement production and waste incineration and provide CDR (BECCS, DACCS)

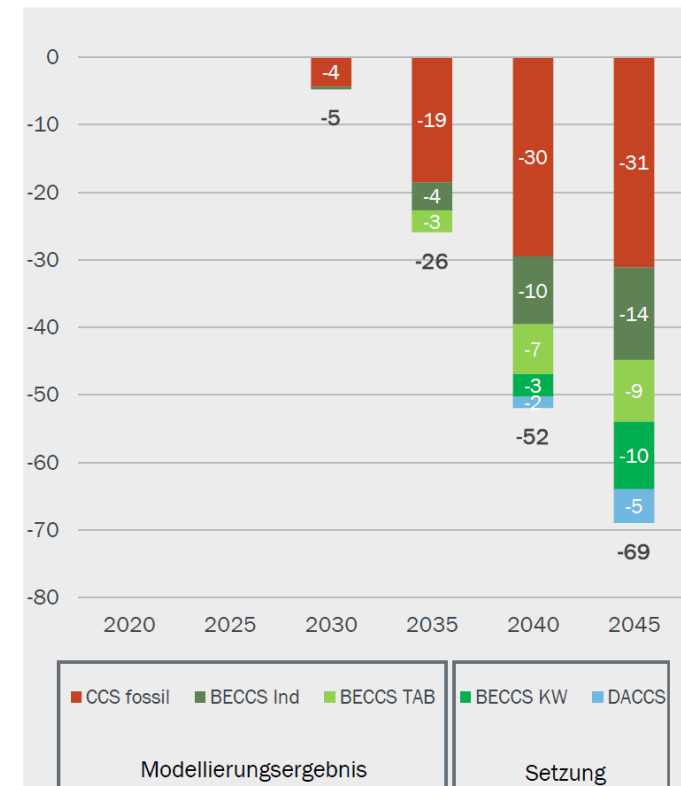
**CCU/S min**



**CCU/S med**



**CCU/S max**



# CDRmare activities with GEOSTOR participation

- Annual meeting of CDRmare mission in Stralsund (Jan. 31<sup>st</sup> – Feb 2<sup>nd</sup>, 2023)
- Regular meetings of CDRmare executive and management boards (with K. Wallmann and K. Hamann)
- GEOSTOR presentations at CDRmare seminar series (Nov. 28<sup>th</sup>, 2022; March 20<sup>th</sup> and June 19<sup>th</sup>, 2023 )
- Meetings with CDRmare stakeholder and scientific boards (Sep. 29<sup>th</sup>, 2022; Feb. 2<sup>nd</sup>, March 31<sup>st</sup>)
- CDRmare (GEOSTOR) presentation at national parliament in Berlin (Sep. 29<sup>th</sup>, 2022; March 31<sup>st</sup>, 2023)



# Public outreach on CCS and GEOSTOR

- Radio, podcast and TV interviews (NDR: Jan. 27<sup>th</sup>, RBB: Feb. 7<sup>th</sup>, Radio FluxFM: Feb. 16<sup>th</sup>, SWR3: March 7<sup>th</sup>, ARD: March 9<sup>th</sup>, ZDF: March 9<sup>th</sup>, NDR: March 15<sup>th</sup>, Handelsblatt Podcast: March, 17<sup>th</sup>, Podcast Heinrich Böll Stiftung: March, 22<sup>nd</sup>, ARD: March 28<sup>th</sup>, Wissenschaft im Dialog: March 28<sup>th</sup>, Deutschland Radio: March 30<sup>th</sup>, WDR Quarks: July 6<sup>th</sup>, ZDF: Sep., 16<sup>th</sup>)
- Interviews with print media (Handelsblatt: Jan. 26<sup>th</sup>, Osnabrücker Zeitung: Feb. 9<sup>th</sup>, Arbeitswelt: Feb. 24<sup>th</sup>, Hörzu Wissen: March 16<sup>th</sup>, Reuters: Aug. 3<sup>rd</sup>, Bild der Wissenschaft: Aug. 4<sup>th</sup>, Cicero: Sep. 13<sup>th</sup>, Rheinische Post: Sep. 15<sup>th</sup>)
- Talks at meetings and conferences (UBA: Oct. 14<sup>th</sup>, GEOMAR supervisory board: Nov. 3<sup>rd</sup>, KlimaDiskursNRW: Nov. 24<sup>th</sup>, UBA: Dec. 1<sup>st</sup>, 2022; Insel Konferenz: March 2<sup>nd</sup>, DGMK Frühjahrstagung: June 1<sup>st</sup>, IHK Flensburg: June, 7<sup>th</sup>, ExxonMobil: Sep. 18<sup>th</sup>, TÜV Sustainability Conference: Sep 21<sup>st</sup>, Hermann Ehlers Akademie: Sep. 21<sup>st</sup>)

# Public outreach on CCS and GEOSTOR (K. Wallmann)

## Meetings with policy makers, NGOs and industry

Oct. 25 <sup>th</sup> , 2022	Holcim
Nov. 11 <sup>th</sup> , 2022	Bellona
Dec. 14 <sup>th</sup> , 2022	AGORA
Jan. 12 <sup>th</sup> , 2023	MdB Lisa Baldrum (Grüne)
Jan 16 <sup>th</sup> , 2023	Minister Dirk Schrödter (SH, CDU)
Feb. 13 <sup>th</sup> , 2023	MdB Olaf in der Beek (FDP)
Feb. 21 <sup>st</sup> , 2023	State secretary Dieter Janecek (BMWK)
Feb. 23 <sup>rd</sup> , 2023	MdB Astrid Damerow (CDU)
March 7 <sup>th</sup> , 2023	Minister Tobias Goldschmidt SH (Grüne)
March, 13 <sup>th</sup> , 2023	Members of state parliament SH (Grüne)
March, 15 <sup>th</sup> , 2023	Members of federal parliament (SPD)
March 17 <sup>th</sup> , 2023	ExxonMobil
March 21 <sup>st</sup> , 2023	WintershallDEA

# Public outreach on CCS and GEOSTOR



## Meetings with policy makers, NGOs and industry

March 27<sup>th</sup>, 2023

April, 4<sup>th</sup>, 2023

April 29<sup>th</sup>, 2023

May, 2<sup>nd</sup>, 2023

May 12<sup>st</sup>, 2023

May 15<sup>th</sup>, 2023

May 16<sup>th</sup>, 2023

May 26<sup>th</sup>, 2023

July, 7<sup>th</sup>, 2023

July 13<sup>th</sup>, 2023

July, 14<sup>th</sup>, 2023

Sep. 12<sup>th</sup>, 2023

Sep. 27<sup>th</sup>, 2023

Holcim

Members of state parliament SH (CDU)

**Minister Robert Habeck** (BMWK, Grüne)

Members of state parliament SH (CDU)

WintershallDEA

MdB Mark Helfrich (CDU)

Vordenkwerk (German Watch)

ExxonMobil

BMF

IHK Kiel

DENA

ExxonMobil

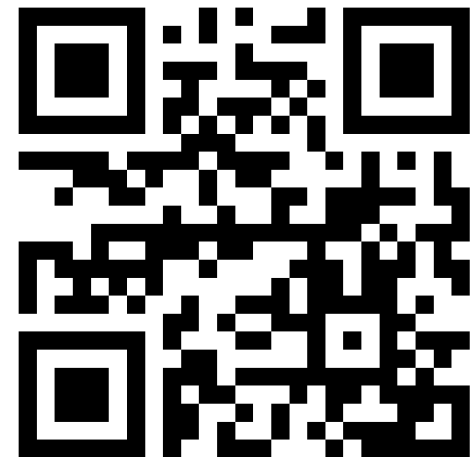
CCS hearing at state parliament of SH

- Annual GHOSTOR meeting (Sep. 28<sup>th</sup>, 2022, Hannover; Sep. 25<sup>th</sup>, 2023, Hamburg )
- Regular meetings of GHOSTOR steering board (Sep. 28<sup>th</sup>, 2022; March 6<sup>th</sup>, 2023; May 8<sup>th</sup>, 2023, online)
- Meetings with GHOSTOR stakeholder board (Sep. 30<sup>th</sup>, online, 2022; March 14<sup>th</sup>, Hamburg, Sep. 26<sup>th</sup>, 2023, Hamburg )
- ACT 4 proposal submitted together with WintershallIDEA was not funded by BMWK
- New GHOSTOR podcast now available at:

[Podcast : GHOSTOR \(cdrmare.de\)](https://www.cdrmare.de)

**Vielen Dank für  
Ihre Aufmerksamkeit!**

<https://geostor.cdrmare.de>



# Proposal for second GEOSTOR phase

- Draft proposal submitted in May 31<sup>st</sup>, 2023
- Review of draft proposal by external reviewers in June, 2023
- On site presentation of draft proposal for CDRmare scientific and stakeholder board at Berlin in June 21<sup>th</sup>, 2023
- Notification by PTJ on reviewer recommendations in Sep. 15<sup>th</sup>, 2023:
  - GEOSTOR very positively evaluated and highly ranked
  - Full proposal should be written as outlined in the draft proposal
  - No financial cuts proposed (total budget: ca 4 Mio. €)
  - Full proposal to be submitted online until Jan. 9<sup>th</sup>, 2024
  - Funding period: Aug. 1<sup>st</sup>, 2024 – July 31<sup>st</sup>, 2027

# Proposal for second GEOSTOR phase

## Goals:

- Facilitate the development of the first industrial CO<sub>2</sub> storage project in Germany
- Guaranty high environmental standards
- Establish close cooperation with potential storage site operators (Wintershall DEA, ESSO)

## Workplan (focused on area A):

- WP1: Baseline study (benthic communities, natural seismicity and seepage, GIS)
- WP2: Assessment of environmental risks (induced seismicity and leakage, scoping report for future environmental impact study, definition of pressure limit value)
- WP3: Development of monitoring plan (passive seismology, monitoring concept)
- WP4: Public outreach and stakeholder dialogue

# Proposal for second GEOSTOR phase

## **GEOSTOR consortium for second phase:**

- Kiel University (CAU): Natural and induced seismicity, geotechnical risks, dynamic reservoir modeling, new participants from seismology department: Thomas Meier and Christian Weidle
- GEOMAR: Coordination, outreach, natural seepage and induced leakage, monitoring plan, scoping report for future environmental impact study, definition of limit values
- K.U.M: Passive seismic monitoring, natural and induced seismicity
- Senkenberg (Ingrid Kröncke): Benthic organisms and communities, baseline study and leakage impacts
- TrueOcean (TO): GIS using Marispace-X, data management



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