MEDWAY HUB CAMELOT CCS PROJECT

NG Grain LNG terminal

Project Development Companies

SynergiaEnergy

- Originator of Medway Hub CCS concept, initially tailored connect the Medway emitter cluster to the Esmond-Forbes offshore carbon storage sites
- In-depth experience of the Synergia management team concerning gas storage in the UK. Three of the Synergia team were instigators of the last commercial gas storage facility to be built in the UK – the Humbly Grove gas storage facility in Hampshire
- The same three team members were founders of Star Energy, which in addition to oil and gas production and power generation, became a leading gas storage development company. Star Energy studied most of the UKCS depleted reservoirs for gas storage suitability and had multiple gas storage projects under development
- Strategy is to initiate and develop CCS projects and have recently introduced the Cambay CCS Scheme based on its Cambay gas field in Gujarat State, India.

Harbour Energy

Harbour Energy is a major CCS developer in the UKCS:

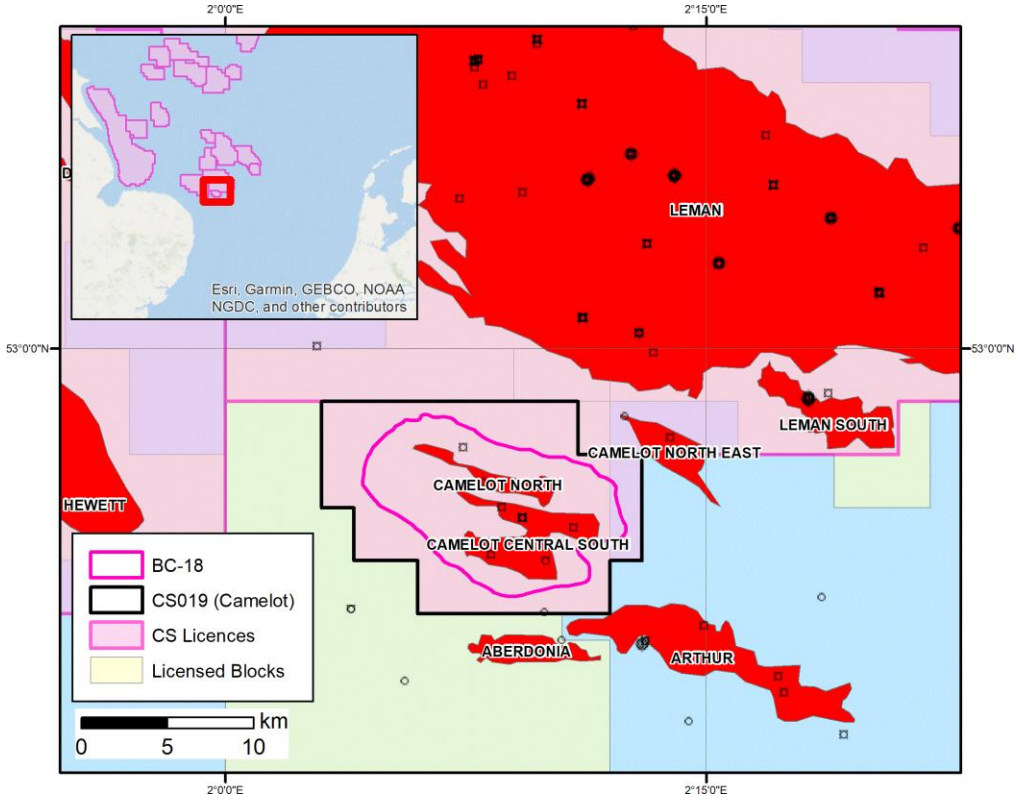
Viking CCS
Led by Harbour Energy (60% interest, operated), with non-operated partner bp (40% interest), Viking aims to transport and store CO_2 in secure offshore storage sites in the UK's Southern Gas Basin. In 2023, Viking was selected in Track 2 of the UK government's regulatory process.

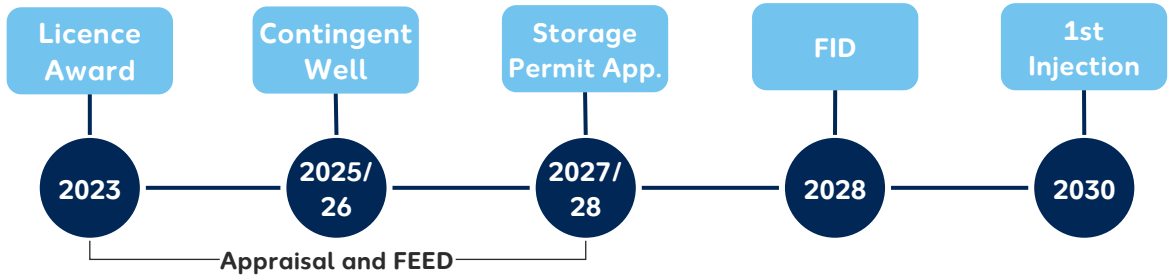
Acorn
Harbour Energy has a 30% non-operated interest in the Acorn project, alongside Storegga, Shell, and North Sea Midstream Partners. Acorn is developing projects to capture and store CO_2 emissions and establish hydrogen infrastructure in Scotland. During 2023, alongside the Viking CCS Project, the Acorn Project was selected in Track 2 of the UK government's regulatory process.

Camelot
Camelot is operated by Synergia. Harbour Energy acquired its interest in Camelot through its acquisition of the Wintershall Dea asset portfolio in 2024.

Poseidon
Poseidon is operated by Perenco. Harbour Energy acquired its interest in Poseidon through its acquisition of the Wintershall Dea asset portfolio in 2024.

Camelot Licence





- Located c. 25-30 km off the coast of Norfolk in the east of England, the license area has been named "Camelot" based on the depleted Camelot gas fields
- Licence covers Blocks 53/01 & 53/02 of the UKCS and is approx. 68 km^2 in size
- Contains depleted Rotliegend gas fields, Camelot Central-South and Bunter Closure 18 (BC-18), which is a saline aquifer
- Synergia Energy CCS Limited ("Synergia") and Wintershall Dea Carbon Management Solutions UK ("WDCMS UK") were awarded the licence on a 50:50 basis in August 2023
- Synergia is the designated operator in the Appraisal Term
- Work program will initially focus on further technical and commercial evaluation and de-risking of the storage asset. Contingent on results this could lead to the drilling of an appraisal well, followed by a FEED study and the application for a Storage Permit
- Storage capacity of ~60-100 Mt with yearly injection rates above 5 Mtpa

CAMELOT MILESTONES

PARTNER SETUP
- Synergia Energy (50%, operator)
- WD (50%)

STORAGE PLAY
- Camelot (depleted gas fields)
- BC-18 (saline aquifer)

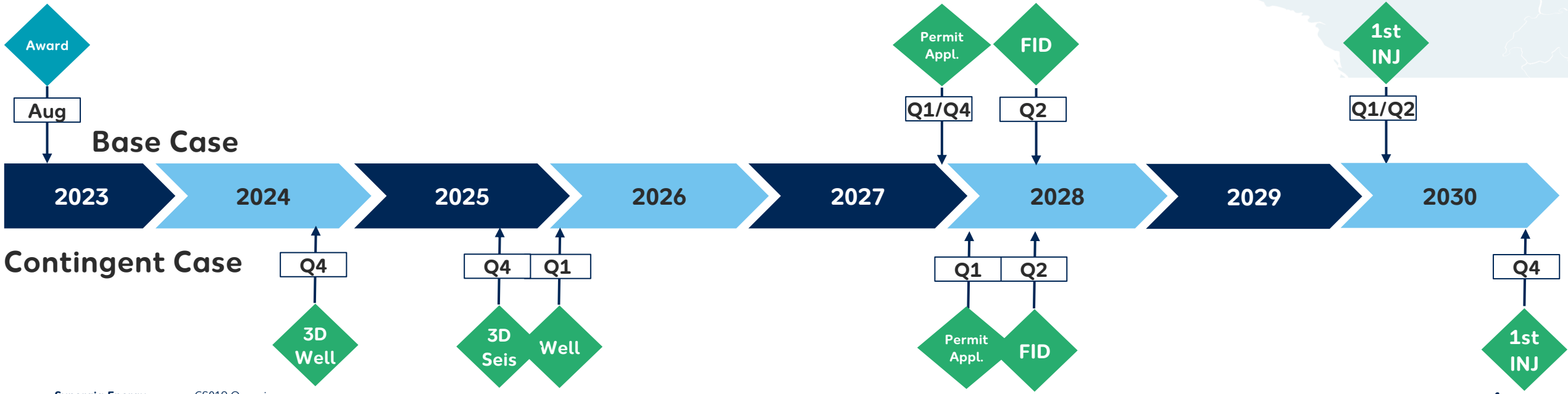
LICENCE AWARD / DURATION
- Aug 2023
- 5 years (Appraisal Term)

CO_2 STORAGE CAPACITY
- Gross: 66 - 95 Mt

CO_2 INJECTIVITY (GROSS)
- c. 6.5 Mtpa

TRANSPORTATION MODE
- Shuttle tanker concept with a dedicated FISO favoured, but further options are being assessed

WORK COMMITTMENTS:
- Firm: Desktop studies, seismic reprocessing
- Contingent: New 3D seismic survey, appraisal well + injectivity test, FEED



Camelot Development Concept

- During the application phase, the JV used the development concept based on the "Medway Hub CCS Project"
- The JV is also considering alternative development options in order to select the most robust and cost effective scheme, including the importation of CO_2 cargoes via marine tanker from continental Europe
- The base case hub scheme incorporates the following features:
  - Loading the liquid CO_2 onto purpose-built marine CO2 tankers via a purpose-built liquid CO_2 loading jetty operated by National Grid (in the case of the Isle of Grain cargoes)
  - Transportation of the liquid CO_2 to the Camelot carbon storage fields by the marine CO_2 tanker
  - Offloading of the liquid CO_2 from the marine tanker onto a purpose-built Floating Injection, Storage and Offloading (FISO) vessel moored over the Camelot fields
  - Processing of CO_2 on the FISO prior to injection into the Camelot reservoirs via umbilicals connected to sub-sea manifolds

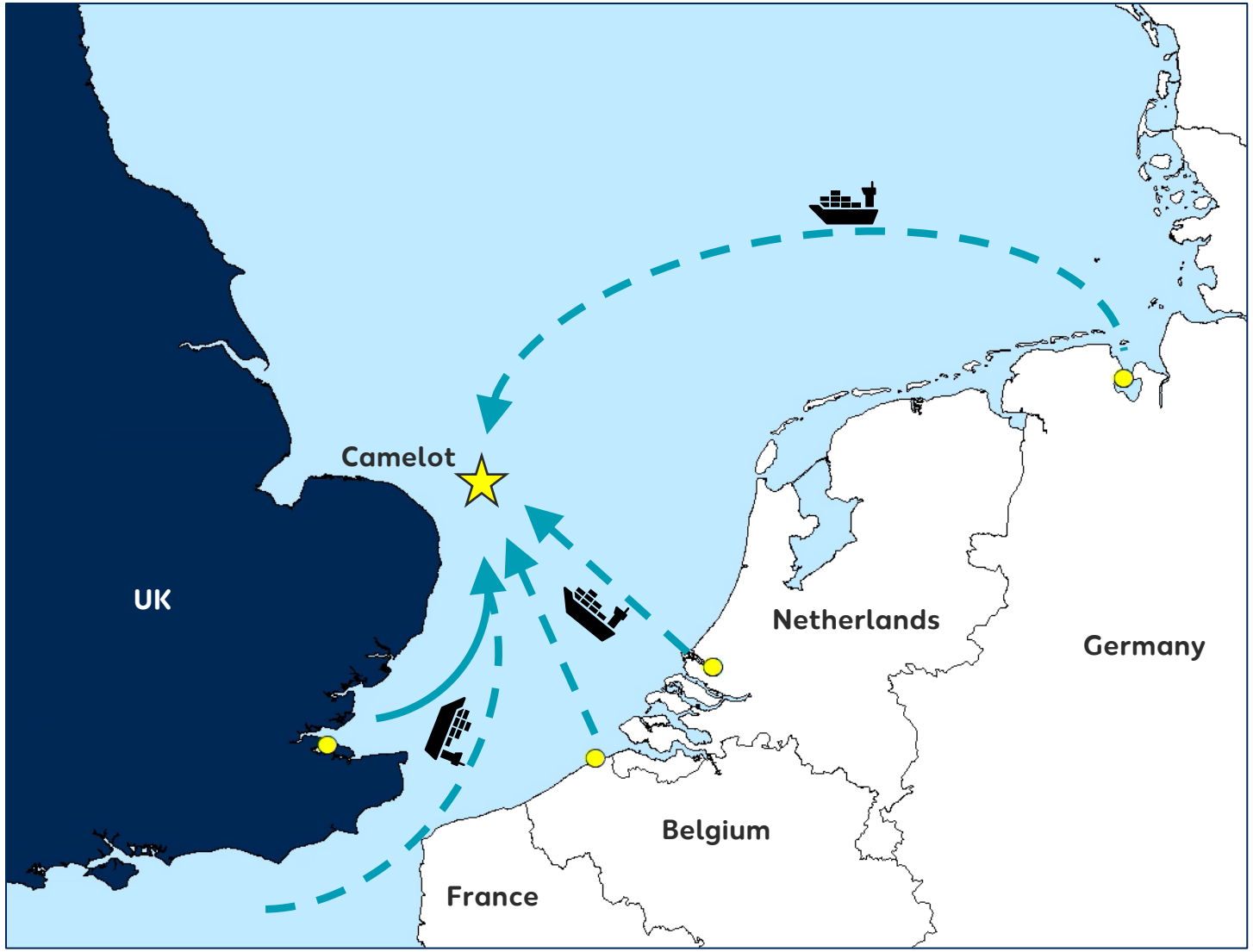
FISO FEATURES & ADVANTAGES

- Moored vessel incorporates CO_2 loading facilities from CO_2 tankers, CO_2 storage, pumping equipment for CO_2 injection via umbilicals into depleted gas reservoirs and saline aquifers
- FISO is CCS equivalent of FPSO and can be positioned over any suitable storage reservoir and relocated once a particular reservoir has been filled. Can accept CO_2 cargoes from multiple locations via CO_2 tanker
- Eliminates the need for CO_2 seabed pipelines which have inherent technical challenges
- Currently several major marine vessel construction companies (Technip, Bumi Armada) have advanced FISO designs and a bulk carrier conversion to FISO is underway.
- FISO and marine CO_2 tankers will be wet-leased on long-term contract basis

COMMERCIAL HIGHLIGHTS

- Synergia / Wintershall awarded carbon storage license CS019 for the **Camelot** reservoirs by the North Sea Transition Authority (NSTA) June 2023
- 50:50 JV with Harbour Energy; Synergia is operator
- Multiple discussions have been held with primary emitter customers as well as NG Grain (who would liquefy, store and load CO_2 at their Isle of Grain LNG terminal). Other potential customers include CO_2 hubs at Zeebrugge, Rotterdam and Wilhelmshaven.
- Commercial model is a "merchant scheme" not predicated by UK Government funding or subsidies
- Emitter customers to enter into a long-term offtake agreement with Synergia / Harbour Energy acting as T&S (Transportation & Storage) contractors.
- Emitter customers will be offered a T&S price that offers cost savings over the prevailing emitting cost
- Emitter customers to save on emission costs and have the benefit of carbon zero power generation

Camelot Concept - Commercial



Business model:

- Transportation & Storage (T&S) service
- Merchant scheme - long term contract offering Medway Hub customers cost advantage compared to carbon emission (UKA) costs

Customers:

- Medway Hub Power Plants
- Additional CO_2 emitters in Greater Thames Estuary region
- Marine CO_2 cargoes from other origins:
  - UK Southwestern and Southern coast
  - Zeebrugge, Rotterdam and Wilhelmshaven CO_2 Hubs

Strategy:

- Assist emitter customers to access Government funding
- Apply for additional Carbon Storage licenses for future FISO utilisation

Camelot Project - Participants

UK based companies have been selected to support the Camelot JV in the early Appraisal Term phase

- The London office of OPC (Oilfield Production Consultants) provides general geoscience and subsurface engineering expertise
- DUG has been selected to reprocess the existing Camelot 3D survey
- Axis Well Technology (UK) supports the Camelot JV in terms of well integrity analysis and ERA (Early Risk Assessment) reporting
- ERA auditing services will be provided by London based ERCE and RISC