



The Aurora Project a Liquid hydrogen value chain for maritime transport in Norway



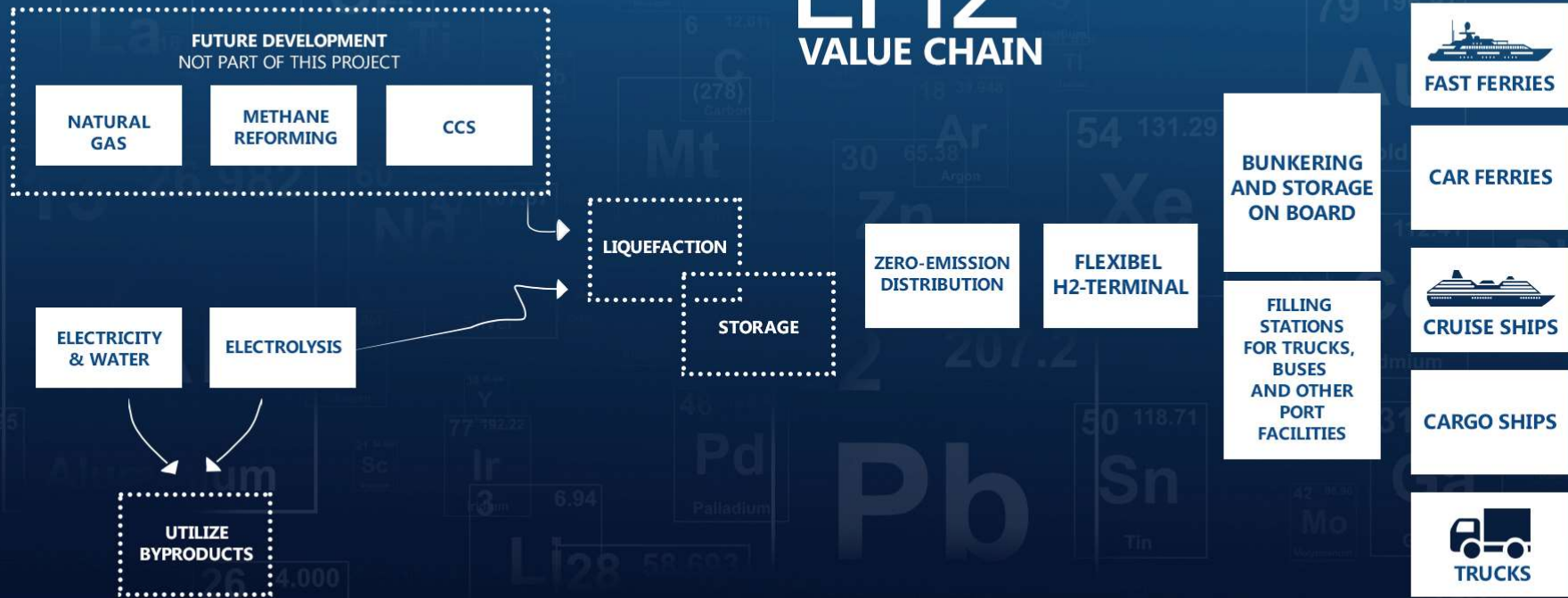
BKK electrification strategy



Hydrogen as maritime fuel in Norway



LH2 VALUE CHAIN





ASSET BUYOUT PARTNERS

Topeka Overnight RoRo service; the zero emission seaborne alternative

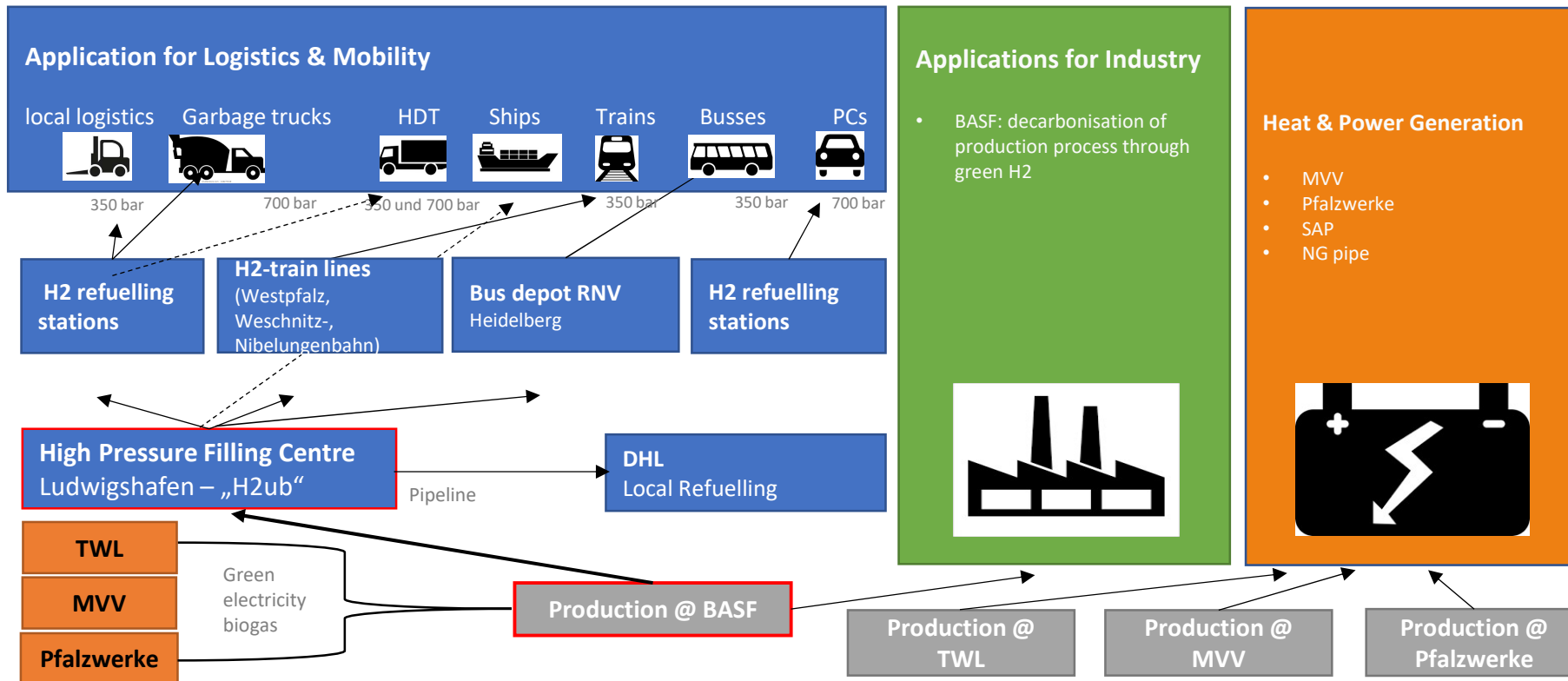




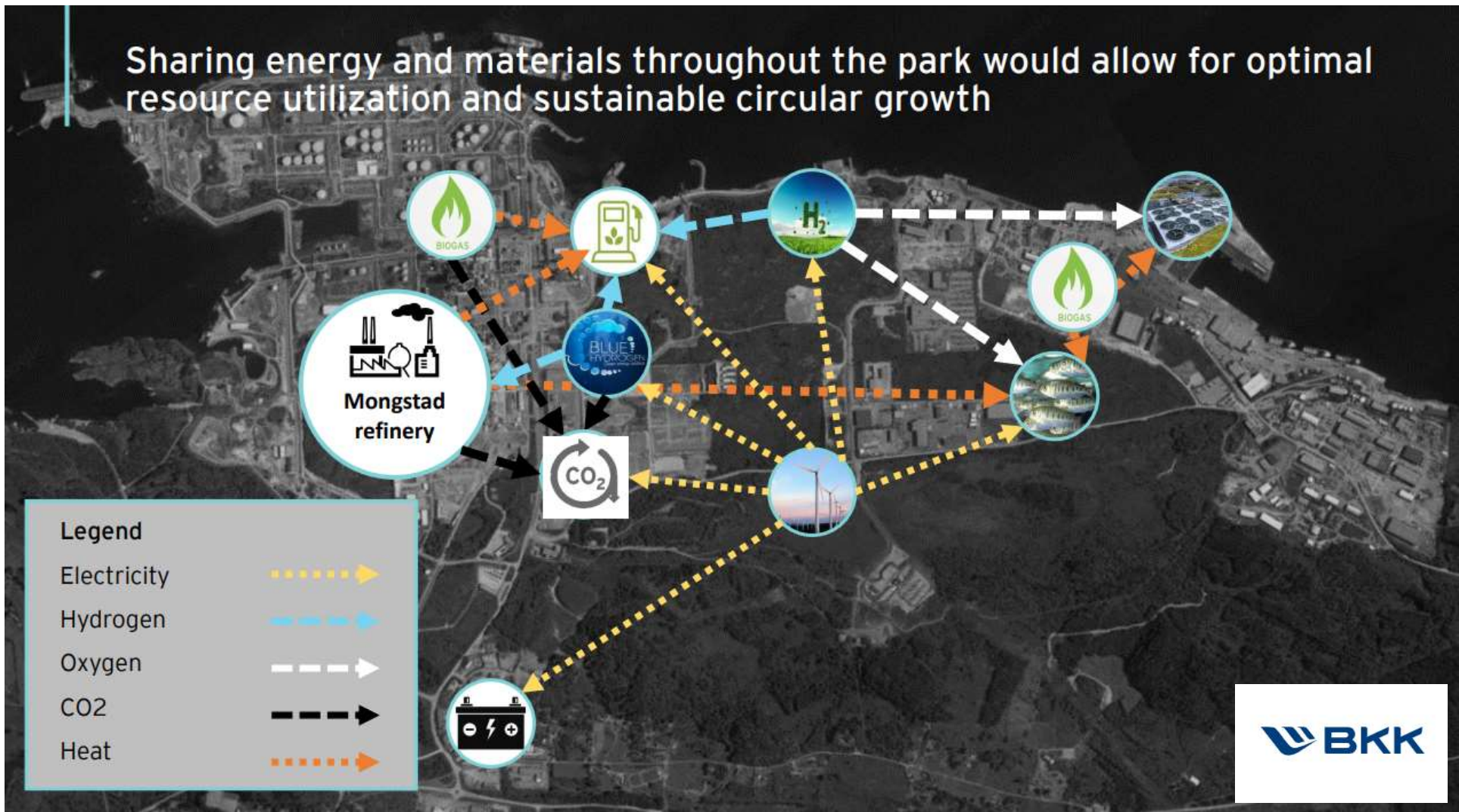
- *Take the initiative to establish a hubs for hydrogen in Norway*
- *Identify transport routes where heavy transport of hydrogen may be relevant, and stimulate the establishment of infrastructure that makes this possible*
- *We will spend billions on hydrogen, both in the form of increased costs for the public tenders we make and for infrastructure*

Big Picture „H2-Valley“

Rhein-Neckar as „Model Region Hydrogen“



Sharing energy and materials throughout the park would allow for optimal resource utilization and sustainable circular growth



Legend	
Electricity>
Hydrogen	- - - ->
Oxygen	- - - ->
CO ₂	- - - ->
Heat>



Consortium funding journey

Setter fart på grønn overgang: 71 millioner kroner skal få skip og ferger over på hydrogendrift

To konsortier deler på 71 millioner kroner fra Pilot E-ordningen til å utvikle hele verdikjeden fra produksjon, distribusjon og fylling av hydrogen på framtidens nullutslippsfartøy.



39 MNOK

Skal bygge verdens første frakteskip drevet av hydrogen

Wilhelmsen-rederiet og partnerne har fått 80 millioner kroner i støtte fra EU for å realisere pionérprosjektet til havs.



80 MNOK

219 millioner fra Enova til hydrogen skip: – Akkurat den typen prosjekter vi ønsker

Wilhelmsen-gruppen får 219 millioner kroner fra Enova til to hydrogenrevne frakteskip som skal gå mellom norske oljebaser. – Viktig for maritim industri, sier Jan Eyvin Wang i Wilhelmsen.



219 MNOK

Europe's first Maritime value chain project for Liquid Hydrogen is short-listed as Norwegian candidate for IPCEI Hydrogen

xinde marine news 2021-04-21 08:58



Targeting ENOVA
IPCEI funding

IPCEI is a fully integrated European project - not the sum of individual actors' projects



Commission approves €2.9 billion support by twelve Member States for second important European project for **battery value chain**

Raw and advanced materials	Battery cells	Battery systems	Recycling and sustainability
<ul style="list-style-type: none"> ACIS Arkema Borealis Ferroglobe Fluorsid Green Energy Storage Hydrometal Italmatch Chemicals Keliber Prayon SGL Carbon Solvay Tokai Carbon Group VARTA Micro Innovation 	<ul style="list-style-type: none"> Alumina Systems BMW Cellforce Group ElringKlinger FCA Green Energy Storage InoBat Auto Manz Midac Northvolt SGL Carbon Skeleton Technologies Sunlight Systems Tesla VARTA Micro Innovation 	<ul style="list-style-type: none"> ACIS Alumina Systems AVL BMW Endurance Enel X EnergO Aqua FCA FIAMM FPT Industrial Green Energy Storage InoBat Energy Manz Miba eMobility Midac Rimac Automobili Rosendahl Nextrom Skeleton Technologies Sunlight Systems Tesla Valmet Automotive Voltlabor 	<ul style="list-style-type: none"> Borealis Enel X Engitec FIAMM Fortum Hydrometal Italmatch Chemicals Keliber Liofit Little Electric Cars Midac SGL Carbon Tesla Valmet Automotive ZTS VaV

Competition



23 European nations launch IPCEI Hydrogen

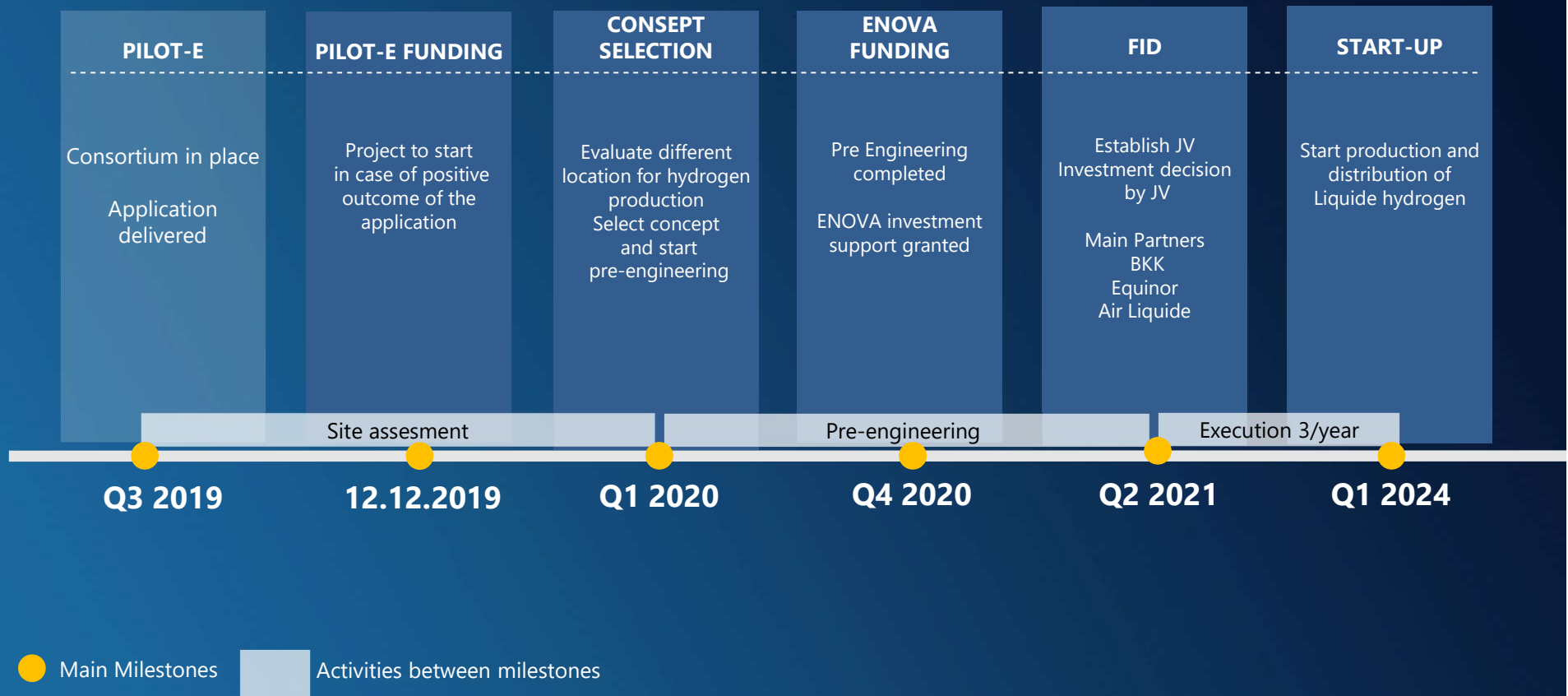
- The Kingdom of Belgium
- the Republic of Bulgaria
- the Czech Republic
- the Kingdom of Denmark
- the Federal Republic of Germany
- the Republic of Estonia
- the Hellenic Republic
- the Kingdom of Spain
- the French Republic
- the Republic of Croatia
- the Italian Republic
- the Grand Duchy of Luxembourg
- the Republic of Hungary
- the Kingdom of the Netherlands
- the Kingdom of Norway
- the Republic of Austria
- the Republic of Poland
- the Portuguese Republic
- Romania
- the Republic of Slovenia
- the Slovak Republic
- the Republic of Finland
- the Kingdom of Sweden

ENOVA

TIMELINE



AURORA PROJECT PLAN





Vi skaper en bærekraftig framtid

 BKK