



## **Batelia & D-ZIB Workshop**

### **Natural gas for inland shipping**

#### **Keynote: Options to use Natural Gas in IWT**

Manfred Seitz, General Manager  
Strasbourg, 21st of June 2017

# Pro Danube – Structure & Objectives

Platform of private companies with strategic economic interest in better framework conditions and higher public investment in the Danube transport & logistics system

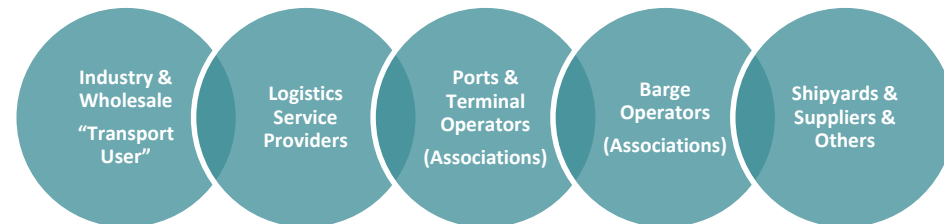
## In a nutshell

- Established autumn 2011 by a group of companies & associations
- Non-profit association based in Vienna
- Network of currently more than 180 companies
- More than a lobbying organisation as it initiates and executes projects
- Service company: Pro Danube Management GmbH (PDM)
- Local representations: Pro Danube Romania, Pro Danube Serbia
- Initiator & coordinator of policy initiatives & projects in IWT, port development & LNG
- Together with partners PDM forms Innovation Transfer Centre for Danube ([www.INDanube.eu](http://www.INDanube.eu))
- More info at: [www.prodanube.eu](http://www.prodanube.eu)

## Priorities

- Engagement for better waterway maintenance & execution of TEN T bottleneck projects
- Promotion of investment in Danube ports
- Support to modernization of Danube fleet
- Elimination of administrative barriers
- Active involvement in EC initiatives & programs

## Partners



# LNG in IWT – Promising start with intensive cooperation

## LNG Masterplan for Rhine-Main-Danube

### LNG TERMINAL IN RUSE (BULGARIA)

*Bulmarket DM Ltd.*

**Location:** on the river Danube in the port area in Ruse, on the grounds of former heavy machinery building factory, on an area of 1,000 m<sup>2</sup>

**Capacity:** 4 vertical tanks of 250 m<sup>3</sup> of LNG (total 1,000 m<sup>3</sup>)

**Facilities:** storage, vessel (un-) loading facility, truck-loading station, truck & vessel fuelling station



LNG small scale terminal in Ruse  
© Bulmarket

### LNG-FUELLED RETROFITTED CONTAINER VESSEL – EIGER DCL Barge B.V. (Danser Group)

**Size:** 105 x 11.45 m (L x M). Draught (max): 3.55 m

**Propulsion:** 2 dual-fuel Wärtsilä 6L20DF, 900 kW

**Bunker capacity (LNG):** 60 m<sup>3</sup> (gross)

**LNG tank:** Vacuum-insulated double-wall pressurised tank IMO type C

### LNG-fuelled type G tanker Sirocco ©

*Chemgas Barging S.a.r.l.*



### LNG-FUELLED TYPE C TANKER – ECOLINER Damen Shipyard Hardinxveld B.V.

**Size:** 110x 11.4 m (L x W). Draught: 3.4 m

**Propulsion:** 4x Scania SGI-16M gas engine

**Bunker capacity (LNG):** 2 x 26 m<sup>3</sup>

**LNG tank:** double walled vacuum-insulated cryogenic tank: Specifics: Air lubrication system, Van der Velden Flex ® tunnel to reduce the resistance in shallow waters



LNG-fuelled retrofitted container vessel Eiger © DCL Barge B.V.

### LNG-FUELLED TYPE G TANKER – SIROCCO Chemgas Barging S.a.r.l

**Size:** 110x 11.4 m (L x W). Draught: 3.15 m

**Propulsion:** single 8L20DF Wärtsilä main engine

**Bunker capacity (LNG):** 88 m<sup>3</sup> (gross)

**LNG tank:** Single wall independent vacuum-insulated pressure tank with design pressure of 10 bar



LNG-fuelled type C tanker EcoLiner © Damen Shipyard Hardinxveld B.V.

## Breakthrough LNG Deployment in Inland Waterway Transport



<https://lngbinnenvaart.eu/>

# LNG Masterplan follow-up implementation – proposed actions

## LNG MP – Actions & Measures

### Masterplan: Actions and Measures

#### Governance & Legislation (1)

1. Provide air emission limits in line with technological development on global perspective
  - Develop long-term roadmap for air emissions of gas engines in cooperation with engine producers and vessel operators
  - Stimulate Research & Innovation in engine technologies with Horizon 2020 and CEF-Innovation
  - Provide comparable evidence on environmental performance of IWT and other modes based on real-life operations monitoring
  - Ensure enforcement of air emission regulation for leveled playing field

#### 2. Implement adjusted regulatory framework for the use of LNG as fuel for inland vessels

- Set into force amendments to the regulatory framework for the use of LNG as fuel for inland vessels (Revision of GCNIR RVR and of Directive 2006/87/EC)

#### 3. Provide standards/guidelines for mobile LNG fuel tanks on board of inland vessels

- Elaborate standards & guidelines for mobile LNG fuel tanks on board of inland vessels incl. their transfer & connection to LNG-fuelled inland vessels

#### 4. Provide amendments to ADN regulations

- Provide amendments to ADN regulations to include the use of LNG as fuel
- Provide amendments to ADN regulations to include transportation of LNG in non-

#### Governance & Legislation (2)

##### 7. Clarify and harmonise risk assessment

- Specify requirements for risk assessment of each bunker configuration and harmonise on the European level
- Define emergency response scenarios for each bunker configuration according to risk assessment

##### 8. Support the industry to set rules and standards for LNG bunker stations and vessels

- Provide a European best practice guideline for permission of onshore-floating LNG bunker facilities

- Provide European regulation for construction and operation of LNG bunker port/can

- Provide European regulation for construction and operation of LNG bunker vessel

- Develop cross-national guidelines for permission/accreditation of LNG bunker vessel operators

##### 9. Ensure safe and efficient LNG bunkering and (un-)loading

- Elaborate harmonised bunkering standards and checklists for all bunker scenarios (STS, TTS, TFS)

- Disseminate safety aspects of SIMOPS (passenger & cargo (un-)loading) concerning LNG bunkering to terminal operators and ensure adequate training of terminal personnel

- Review European best practice guideline and specification of technical safety requirements for LNG (un-)loading

#### Markets & Financing

##### 1. Provide user-oriented information on LNG market development and price

- Consolidate existing market intelligence into information services dedicated for IWT sector

- Ensure user-friendly and transparent LNG price models

##### 2. Ensure fair and sustainable competition in LNG market

- Facilitate sufficient open access LNG infrastructure (import and break bulk terminals)
- Ensure attractive taxation of LNG for road vehicles to support economies of scale

##### 3. Create economies of scale in LNG supply

- Set up LNG hubs in hinterland inland ports supplied by barge/rail through synergies with other LNG users (fuel & energy)

- Reduce LNG supply chain costs by operational and technical innovations

- Apply multi-client strategy for (hinterland) fuelling points by initiating and implementing projects along LNG value chain and across transport modes and energy customers

##### 4. Provide public support for vessel operators

- Optimise EU programmes to facilitate pilot as well as wide-scale deployment of LNG fuelled vessels

- Support critical mass of newly built and retrofitted vessels as pilot projects in CEF Transport

## Proposed instruments for LNG MP implementation

Coordination of Implementation  
LNG Action Plan (Governance &  
Technical Measures)

IWT Lead Project for LNG  
innovations

Program Support Action (PSA)  
2016-2018

Horizon 2020 Call 2017  
& Call 2018

Awareness & Promotion  
Campaign of LNG Platforms plus  
Market-sided Measures

Deployment Projects

Interreg Europe or other EU  
program

CEF Pilot Projects; National  
Programs; Interreg Program  
EFSI Blending

# Why did we get stuck with LNG implementation?

- Spread Diesel – LNG price for vessel operators too small [currently less than 10 €cent) → no business cases
- Strong decrease of landed LNG price did not (yet) reach operators
- Equipment costs still very expensive → few projects → little innovation → little economies of scale
- Complexity of approvals & related costs → more efforts as for regular vessel
- Lack of public funding [CEF Transport general budget limitations & restrictions for vessels // no or little national funding]
- NRMM hit IWT sector unprepared / emission limits tough to be met for gas engine providers → additional barrier for investment
- Structural problems (overcapacity / hard competition in sector & with other transport modes / low margins) limit capacity to finance investments → supporting efforts ahead
- BUT:

**Positive outlook for LNG price**

**Major investment in maritime & road LNG infrastructure & vehicles**



# Dynamics from CEF - LNG Projects (Western Europe)

## Pilot deployment of a smart (bio-) LNG/CNG network in Flanders, investigating an innovative "CNG pipeline" concept

- CEF Transport/Till 2017/€1.466.500
- Drivesystems (Belgium)
- [www.drivesystems.be](http://www.drivesystems.be)
- LNG/CNG station (not said yet where) and a satellite CNG station (Hoboken)

## Connect2LNG

- CEF Transport/Till 2018/€4.546.250
- Unilever Europe Business Center B.V. (France, Germany)
- [www.connect2lng.com](http://www.connect2lng.com)
- Deployment of 5 LNG stations

## Pilot LNG-powered multipurpose RoRo ship

- CEF Transport/Till 2017/€3.740.000
- DBI Borkum B-V, DBI Operations GmbH (The Netherlands, Germany)
- Deployment of a "small-scale LNG-powered Roll-on-Roll off (RoRo) multipurpose ship"

## RealLNG: Turning LNG as marine fuel into reality in the North Sea-Baltic region

- CEF Transport/Till 2017/€13.082.775
- Shell, STC, Port of Rotterdam, Lübeck Port Authority (Germany, The Netherlands)
- [www.reallng.eu](http://www.reallng.eu)
- Deployment of a bunker vessel

## Breakthrough LNG Deployment in Inland Waterway Transport

- CEF Transport/Till 2018/€21.048.544
- EICB (The Netherlands)
- [www.lngbinnenvaart.eu](http://www.lngbinnenvaart.eu)
- Deployment of 6 inland cargo vessels

## Development of LNG infrastructure in Poland – the pilot project

- CEF Transport/Till 2017/€507.250
- Gaspol Spolka Akcyjna (Poland)
- [www.gaspol.pl](http://www.gaspol.pl)
- Deployment of 2 LNG stations

## LNG motion

- CEF Transport/Till 2020/€27.765.100
- Axègaz SAS, PitPoint.LNG B.V., GCA Logistique (France, The Netherlands)
- [www.lngmotion.eu](http://www.lngmotion.eu)
- Deployment of 42 LNG fueling stations and 200 trucks equipped with LNG

## DOOR2LNG – Upgrade of the maritime link integrated in the multimodal container transport routes

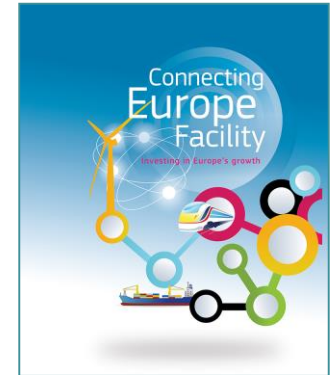
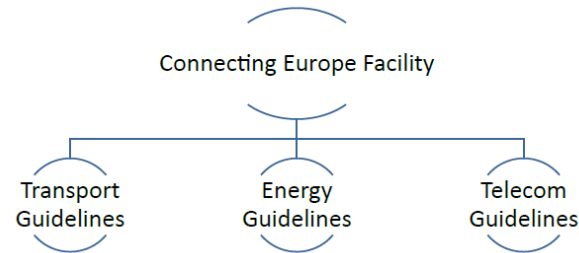
- CEF Transport/Till 2019/€16.958.000
- Containerships Oyj (The Netherlands, UK, Finland, Germany)
- Deployment 4 dual-fuel LNG cargo vessels

## LNG for shipping and logistics in Europe

- CEF Transport/Till 2018/€4.056.000
- LIQUIND 24/7 GmbH (Germany)
- [www.liquind.de](http://www.liquind.de)
- Deployment of 3 mobile LNG filling stations and 2 small-scale LNG-terminals (Duisburg and Mannheim)

# Optimized use of EU Funding Opportunities for LNG

- **Connecting Europe Facility (CEF)**
- **ERDF & Cohesion Funds**
- **European Territorial Cooperation Programs**
- **Horizon 2020**
- **LIFE**



European Union



European Regional Development Fund  
Investing in your future



# CEF MAP 2014-2020 Blending Call 2017

<https://ec.europa.eu/inea/en/news-events/events/2017-cef-transport-blending-call>

## "Blending" call rationale

- Support through financial instruments (e.g. debt financing) may not always be sufficient for the projects needed to complete the trans-European transport network.
- A targeted grant in these cases would enable the financial case to be established
- Blending, in the context of this Call, is the use of CEF grants in projects utilising private finance, or with finance from NPBs/EIB.
- The European Fund for Strategic Investments (EFSI) should be used whenever possible in order to maximise the leverage of private sector involvement.

## As for a "conventional call", but :

- The project total cost should be in excess of EUR 10 m
- Only works are supported (not studies)
- Criteria in Sections 3.1, 3.2 and 3.3 have been streamlined
- CBA/funding gap methodology streamlined
- Assessment of financial readiness (e.g. letter of support) by public or private financial institutions to be included in the submission (ref. section 7.2.2)
- Financial readiness (evidence for PPP/Concession and other projects different) evaluated to assess "maturity"
- Disbursement of grants conditional to financial closure with EIB (EFSI) or NPB or private finance
- Implementation of the Action till 2023

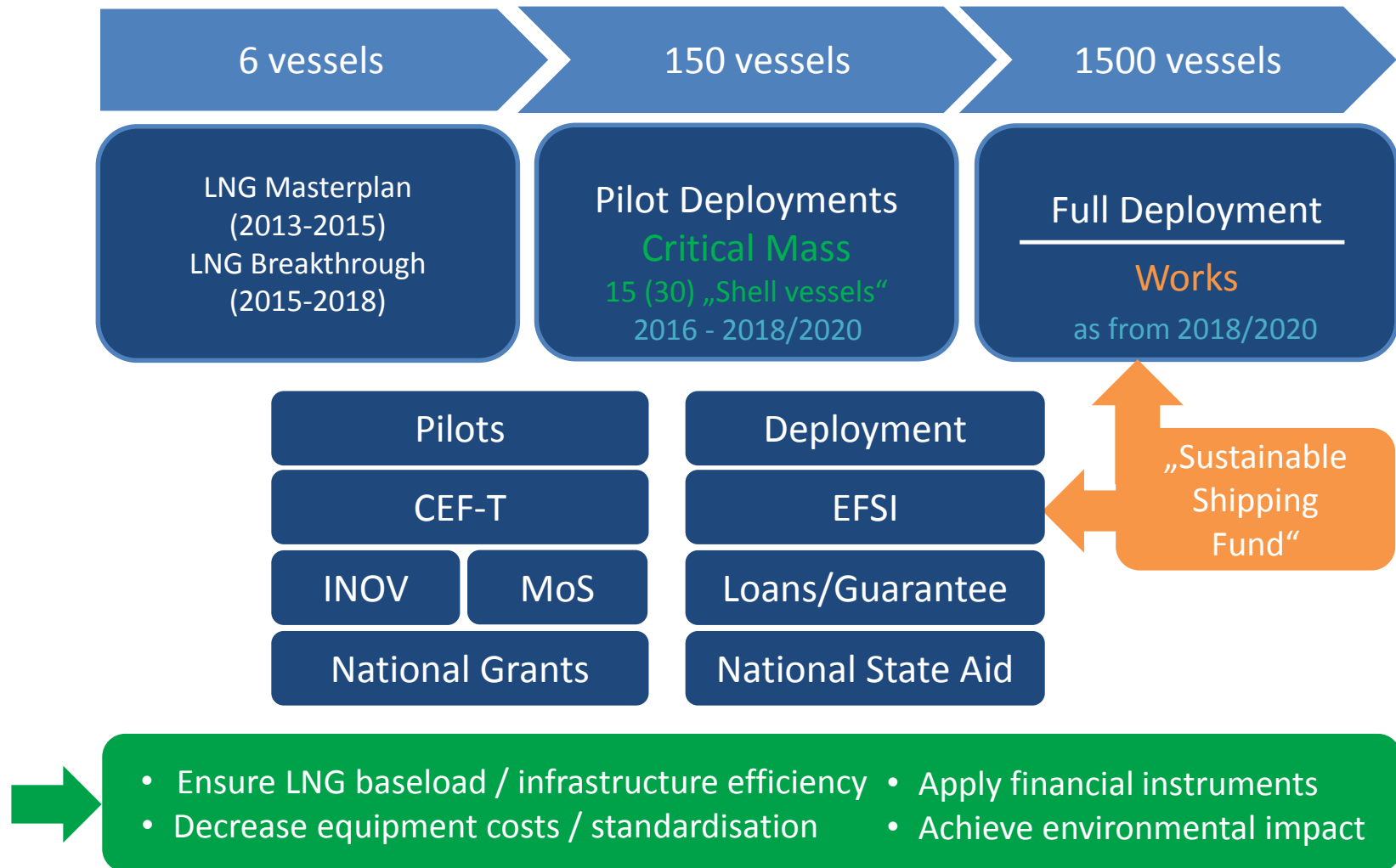
## Blending call : process



- Total budget for grants: 1 BEURO;
- Funding objectives relevant: MoS: 40 MEURO / Innovation 150 MEURO
- Funding rate: as for conventional call /General Envelope
- 1<sup>st</sup> cut off day: 14 July 2017
- 2<sup>nd</sup> cut off day: 30 November 2017
- Prove of Financial Readiness / LoS EIB, NPB, etc.
- Use of EIB/EIAH



# LNG Deployment Strategy



# Some Remarks & Conclusions

- **CEF - Connecting Europe Facility** will continue to play a key role for further implementation with evolving focus – from pilot to “works”; next call unclear
- CEF targets infrastructure deployment and allows vessel co-funding but **CEF is not a fleet modernization support program** – it can be used for co-funding when following the requirements of the call (pilot character, maritime links, highly innovative, etc.)
- **National funding programs supporting transition of fleets** (vessels, trucks) must step in
- **Reflux of unused CEF budgets will provide better funding chances** as from 2018 ff but good lobbying needed to get share
- **Bio-LNG production must be increased to improve CO2 performance and to increase political support**
- **Horizon 2020 must be used in better way** and should provide and implement a dedicated LNG research agenda and lead innovation projects (“LNG optimization”)
- **Project engineering across the transport modes and with energy sector**

**Coordinated European LNG Deployment Strategy & Project Initiative is needed to overcome stagnation**

## Further Information & Contact

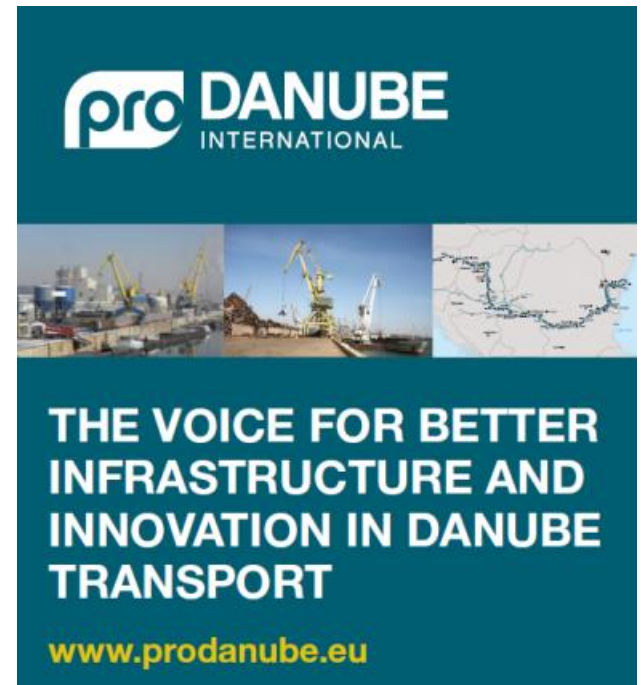
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## INDanube - Centre for Innovation Transfer in the Danube Region

Welcome to INDanube, the facilitator and promoter of innovation in inland waterways transport on the Danube and its navigable tributaries.

[More information](#)