dunkerque LNG
fluxys

73nd TSG Meeting
WG related to CO2 emissions

APRIL 2023

From previous TSG Meeting

Decisions were as follows:

- Shell joins the Task Force on CO_2 Emissions from LNG terminals. The Task Force members are: Dunkerque LNG (Task Force Leader), Enagas, Engie, Sempra Infrastructure, Shell and TotalEnergies.
- The Task Force on CO2 Emissions from LNG terminals will collect examples from GIIGNL members, set-up a questionnaire and submit it. Mr Planteline (Task Force Leader) will make a presentation at next TSG meeting for sharing the results.
- A Task Force is constituted on LCO2 terminalling with the following members: Singapore LNG (Task Force Leader), Dunkerque LNG, Elengy, Engie, Equinor, Fluxys LNG, Osaka Gas, Sempra, Shell and TotalEnergies.
- Mrs. Ang (Task Force Leader) will prepare a scope of work on LCO2 terminalling and will present it at next TSG meeting.

Progress

- Questionnaire not submitted prior this TSG meeting 
- Draft questionnaire submitted here for quick review.
- Draft questionnaire integrating your first impressions to be sent to all WG members following this TSG meeting for detailed review.
- Once approved by WG members, submit to Central office for set-up under google form and diffusion to all members like other questionnaire.
- Presentation of results during 74th TSG meeting

Questionnaire objectives

- Draft questionnaire divided in 6 parts:
- Part 1 is related to methodology. Purpose is to assess where do we stand collectively as of today in carbon accounting and to look at specific points we all face when starting this assessment.
- Part 2 is related to Reporting. Purpose is to assess what are general reporting obligations LNG terminals are facing as of today.
- Part 3 is related to reduction Action Plan which follows usually the carbon footprint assessment. Purpose is to assess where do we stand collectively.
- Part 4 / 5 / 6 are respectively related to Scope 1 / 2 / 3 emissions. Purpose is to assess the share of each scope in terminal global emissions and the reduction actions identified or already conducted. Goal is to identify which members are already ready to share return of experience of some reduction actions conducted in their terminal.

Draft Table of Content

- **Proposal for discussion**
- Scope 1/2/3 to be covered ?
- Other examples ?
- Minimum number of case studies for the final report ?
- Sufficient real cases existing for the time being ?
- Case study presentation might follow the same template used for terminal and PP integration

Introduction

> General context
> Source of main CO2 emissions inside a regasification terminal
> Extent of CO2 emissions per main equipement and scope

I-Ways to reduce CO2 emissions

1.1)Scope 1 emissions

> Flaring	> H2 pilot flare > Pilot on demand flare retrofit >…
> Maintenance flaring	> Rental of temporary Pipeline Compressors >…
> Vaporizers (SCV, S&T, IFV..)	> ORV installations in "cold" sea water area > Solar panels to warm SW > H2 burners > Carbon Capture from SCV Flue gas > FSRU : Warm SW from steam condenser, NG Trim heaters,… >…
> Other scope 1 emission (to be listed)	>…

1.2) Scope 2 emissions

> VSD installations
> BOG / HP LNG Exchanger
> Operation adjustement during peak hours
> Renewable energy facilities on terminal
> Smart building and lighting management system (LED, AC…)
> Others (recent examples of thermal integration)

1.3) Scope 3 emissions

> Site electricle vehicles for O&M personnel
> Others

II-LNG terminal concrete examples

Case Study #1
Case Study #2
Case Study #3
…

Case Study Presentation

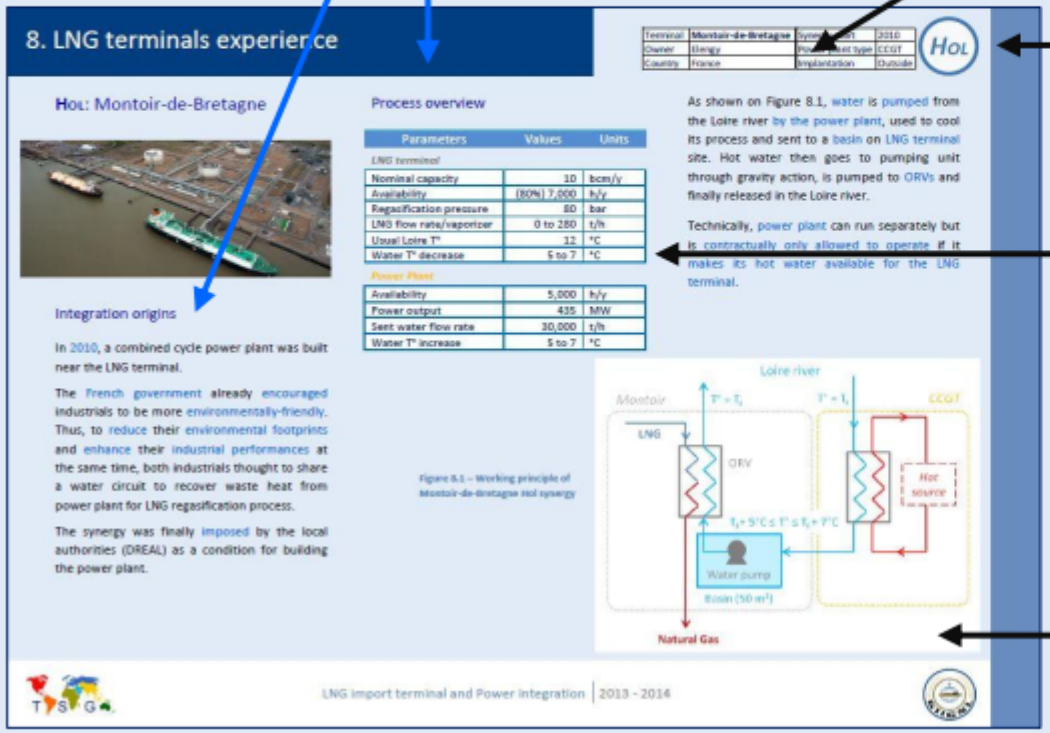
When information was obtained, integration origins, process overview, some elements of costs, generated benefits and return of experience are provided.

Recap table: LNG terminal & synergy

Logotype of the synergy
Same as in 6th part

Operating parameters: LNG terminal & synergy

Scheme of working principle: for both LNG terminal and power plant, only necessary to understand the synergy principle units are represented.



WG members

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ENAGAS		
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Shaping together a bright energy future