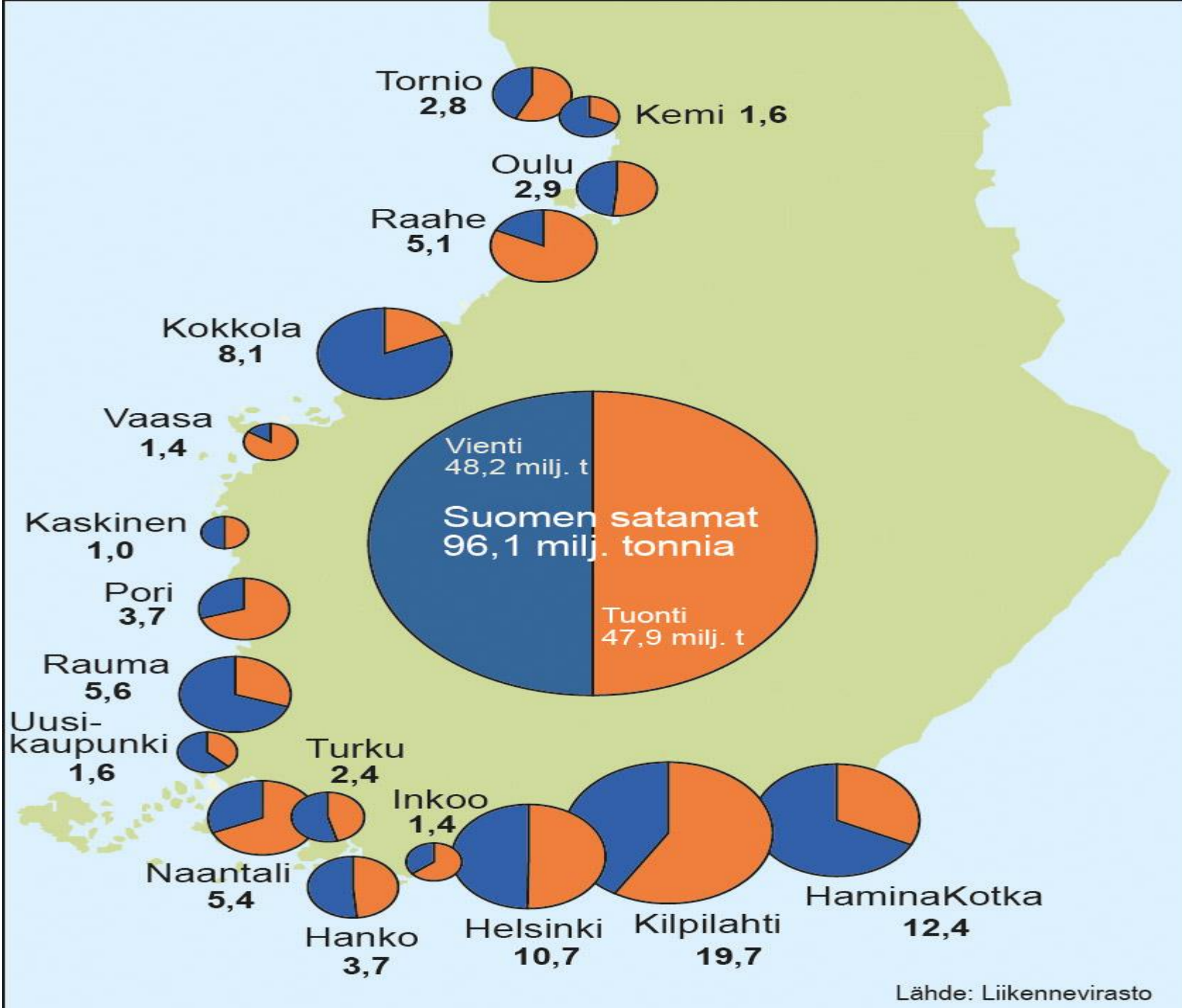

LNG availability in Finnish ports

Ms. Annaleena Mäkilä
Executive Director
Finnish Port Association

23.4.2015 Helsinki



Small scale LNG projects – plans and decisions

- Port of HaminaKotka (TEN-T core port)
- Port of Helsinki (TEN-T core port)
- Port of Turku, Pansio (TEN-T core port)
- Port of Pori, Tahkoluoto
- Port of Rauma
- Port of Tornio, LNG Manga Ltd
- Large scale import terminal - Inkoo (or Porvoo)
- Today: LNG regasification in Porvoo

Port of HaminaKotka

- Hamina Energy Ltd and Alexela Varahalduse AS
- 30.000 m³ LNG terminal with the facilitation to receive, take out, store and deliver
- In connection with the present gas pipeline in Southern Finland; delivery also by truck and train
- An alternative for the gas imported from Russia
- Estimated to be in use by Autumn 2018

Port of Helsinki

- Port of Helsinki is one of main ports in Finland and a TEN-T core port
- Facilitation (bunkering) of alternative fuels (LNG) is planned to be taken care of with a floating unit
- Many harbour centers at Port of Helsinki -> mobility important

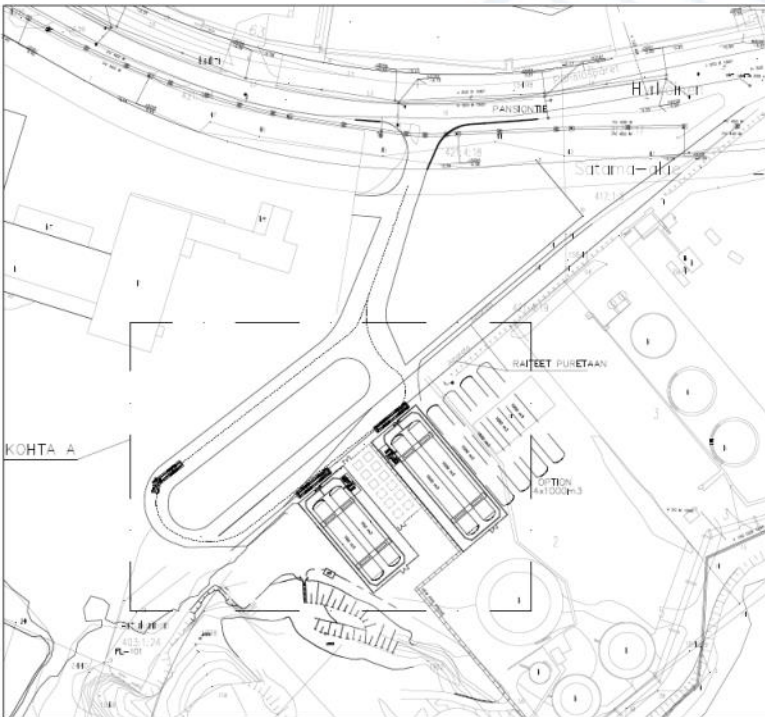
LNG terminal to Turku, Pansio area

- Clean fuel for the Baltic Sea maritime transports
- Industry will be the other important user group
- The local detailed plan has approved Jan 2015
- Volume max 30 000 m³



LNG terminal to Pansio area – 1st stage

- Letter of intent with Skangass Ltd
- 7.500 m3
- Jan 2017



Port of Pori, Tahkoluoto

- LNG terminal of 30.000 m³
- Already well under construction
- Partners:
 - Skangass Ltd, Neste Jacobs, KVL-Tecnics Ltd, FCC Industrial
- First one to be ready by 2016
- Bunkering from truck to ship or straight from storage
- 12 km long pipe line to deliver LNG to local industry





Port of Rauma, Seaside Industry park

- LNG terminal of 10.000 m³ (8 smaller storages)
- Partners:
 - Oy Aga Ab, City of Rauma
- Ready by 2016
- Bunkering from truck to ship and shore to ship
- LNG is delivered to local industry by trucks

Port of Tornio, LNG Manga Ltd

- LNG import terminal of 50.000 m3
- Partners:
 - Outokumpu (Steel) Ltd(P), SSAB, EVP Energy Ltd and Skangass Ltd
- Ready by 2017
- Trucks, tanker, and even a possible pipe line to local SME's

Tornio Manga LNG project

- Outokumpu Group, GASUM OY Rautaruukki Corporation and EPV Energy Ltd. have agreed on project development for a new LNG off grid import terminal into Tornio industrial area and harbor at Northern Coast of the Gulf of Bothnia.
- Tornio ManGa LNG-terminal utilizes the existing infrastructure of the industrial area to the full extent and will be replacing current energy forms i.e. propane and heavy fuel with LNG and will act as new form of energy for the power plant extension.
- LNG commissioning will be in mid of 2017 and actual deliveries will start in December 2017
- Storage capacity is to be built in phases; one 50.000 m3 LNG storage tank first with an option for another tank as demand grows.
- Initial demand 400000 cbm/a LNG or 2,5 TWh for all the partners.





Finngulf LNG

- Large scale import terminal
- Not commercial decisions yet/ Finland & Estonia – some funding from EU (Juncker plan)
- Import terminal of 340 000 m³ -> Two: larger in Finland and smaller in Estonia
- Partners:
 - Gasum Ltd(P) (Finnish), Alexa Energy (Estonian)
- Pipe line Baltic connector
- Either Port of Inkoo or industrial area of Porvoo

LNG on board....

- Viking Grace (2013)
 - Turku – Stockholm
 - Bunkering: truck to ship and from floating unit (Seagull)
- Coast Guard vessel "Turva"
 - Bunkering experience in many Finnish ports
- Tallink Group (2017)
 - Helsinki – Tallinn ro-ro ferry with 2800 passengers
- Containership's fleet

Engagement to promote LNG

- National road map
- EU directive concerning alternative fuels -> national plan how alternative fuels are available in Finland
 - Already done -> EC
 - Flexible enough with core ports!
- Financial tools to promote
 - Environmental grounds for vessels (30 m€)
 - LNG infrastructure and large scale deployment (123 m€)
 - National fairway dues 50% (2015-2017) (appx. 40-45 m€)

Promotion of the use of LNG

LNG 

- Bunkering experience
- Mutual procedures as far as it is possible (ports are different!)
- Co-operation between the ports in Baltic Sea Area
- Co-operation in FPA, BPO, ESPO, IAPH
- Best practises, mutual guidelines



