

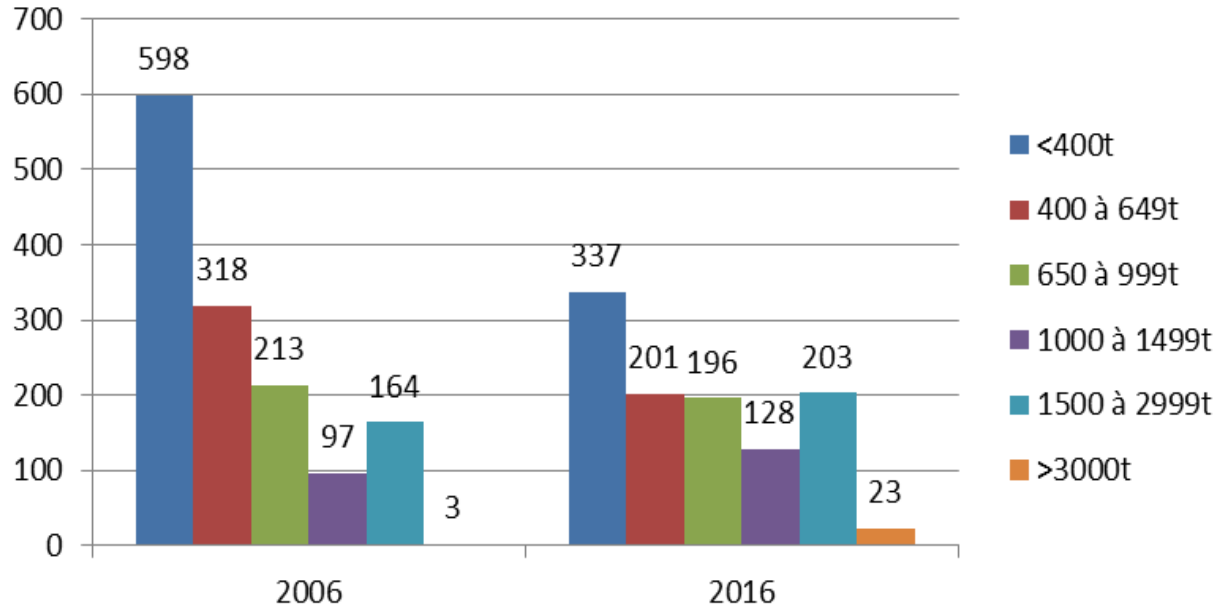
EURO VI engines as a possible solution for Stage V NRMM requirement ?

May 9th, Gorinchem

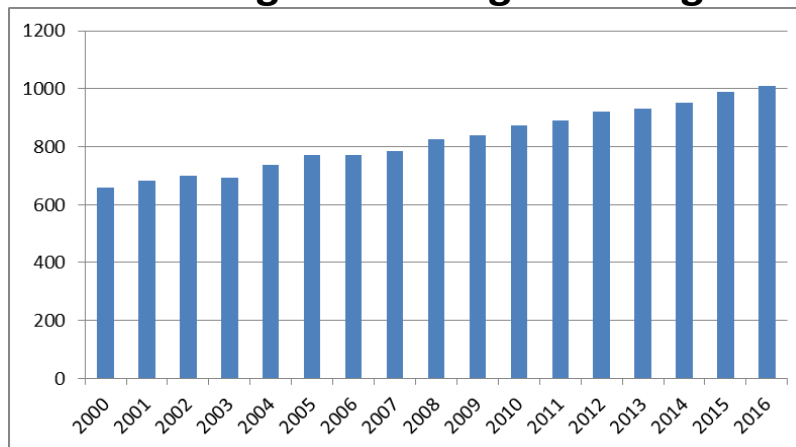
french IWT fleet structure (barge & SP units, without pushers)



2006 : 1393 units **2016 : 1088 units**

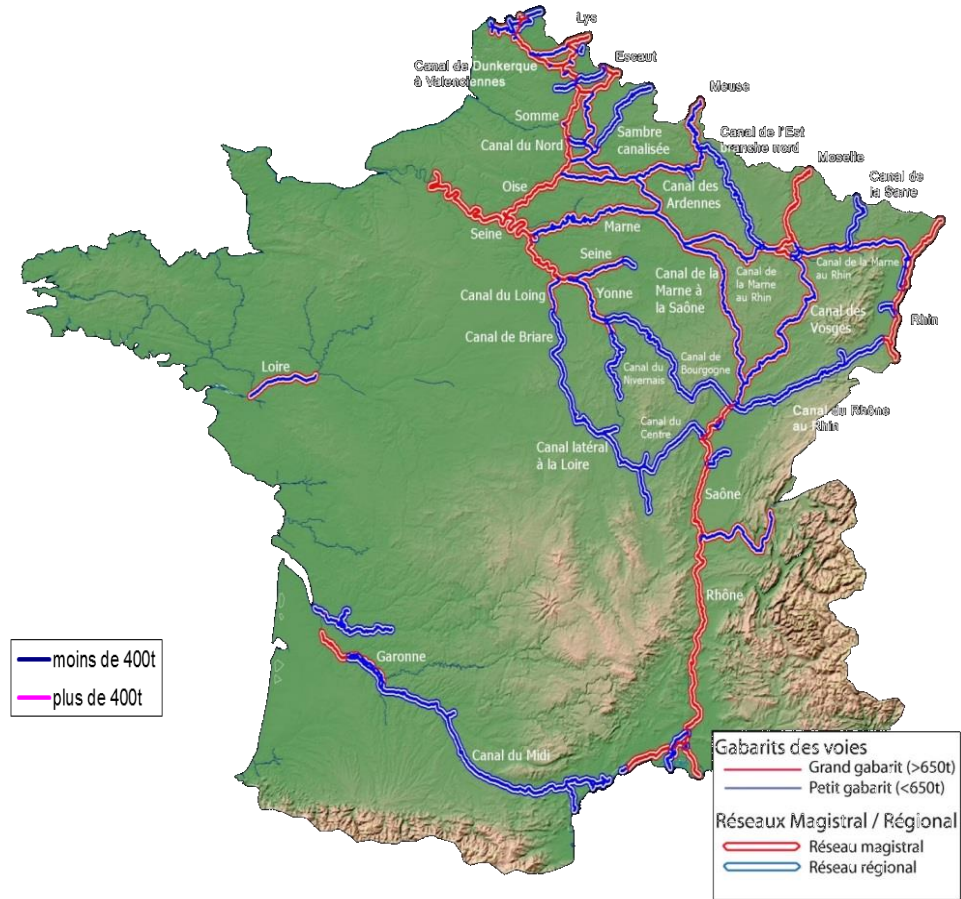
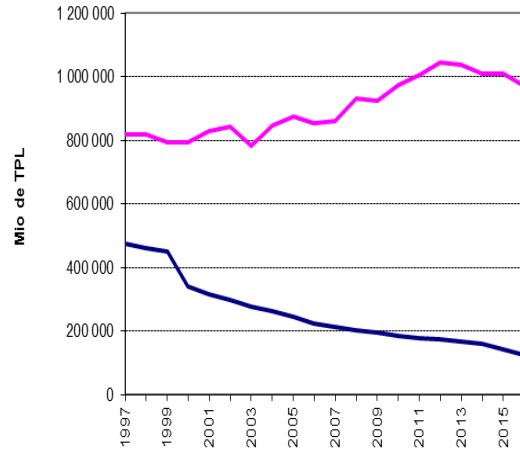


Average Deadweight tonnage





french IWT fleet activity (barge & SP units, without pushers)



trend

- More traffic on the high gauge IW net with large units
- Less locks → impact on engine cycle

Focus on engines generation (french fleet 2010 – 2015)

number of units meeting the **ZKR 2** standards are counted as follows :

- New units put into service at the end of 2015
- Non-french flag units sailing on the French network difficult to assess
- Remotorised units (PAMI grant- 30 % max : 70 000 €)

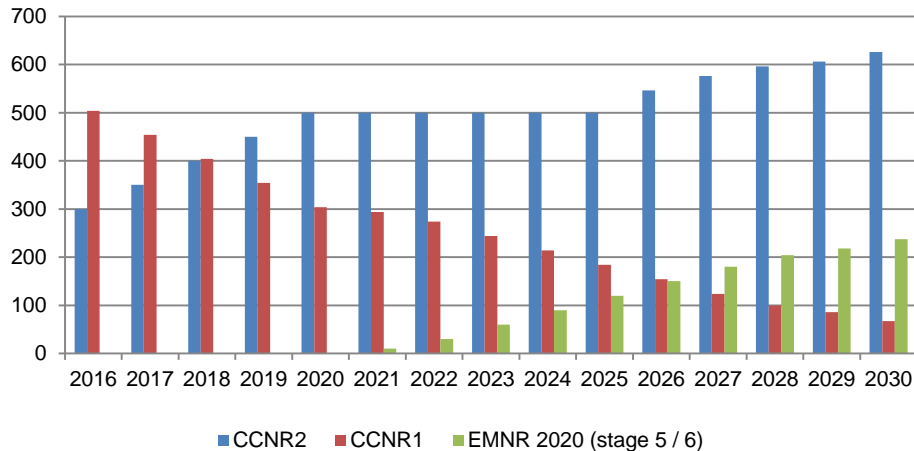
	2010	2011	2012	2013	2014	2015
(1) self-propelled units	890	900	906	876	851	804
(2) ZKR 2	150	180	204	218	237	258
(1) – (2) = ZKR 1	740	720	702	658	614	546

Focus on french fleet remotorization (2016 – 2030 forecast)

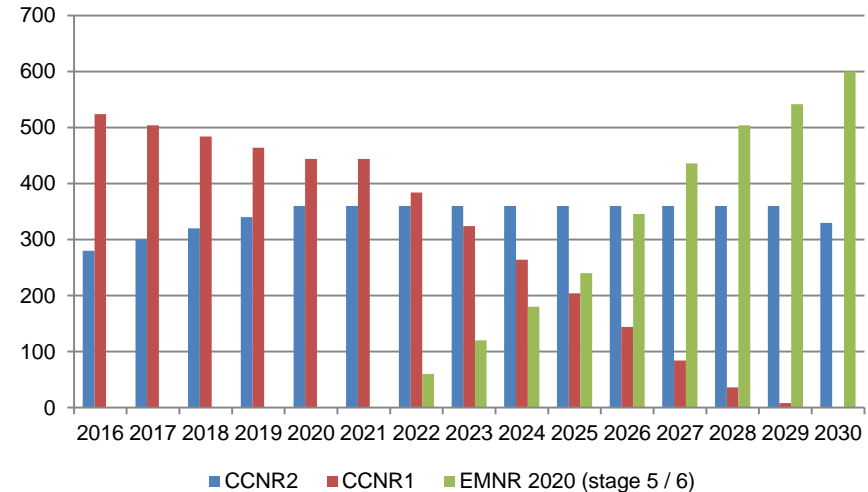
3 information :

- Forecast : installation of ZKR 2 compliant engines by 2020
- additional self-propelled engines expected by 2026 to meet Seine-Scheldt requirements (hypothesis : self-propelled units exclusively fitted with ZKR 2 compliant engines)
- number of vessels complying with the new NRMM standards

French self-propelled units engines distribution forecast (scenario 1)



French self-propelled units engine distribution forecast(scenario 2)



Conclusions / issues

Euro VI compliant truck engine relevant on a rather limited market

Relevant solution for larger units ? Need to approach number of engines (1 or 2)

Approval issue



Thank you for your
attention

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