

Update on gas quality specifications

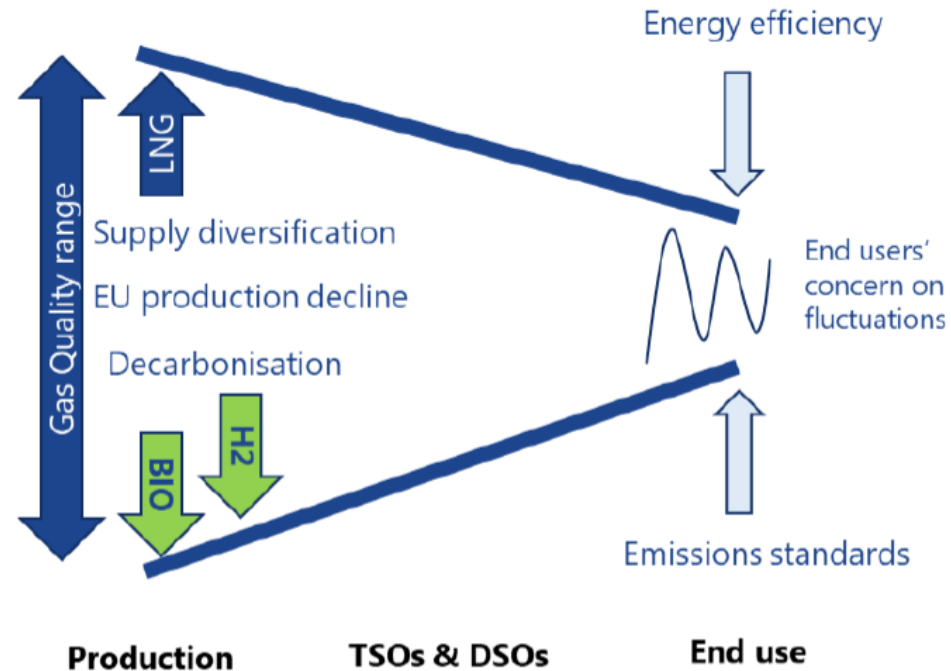


26/10/2021

Masterclasses WKK – COGEN Vlaanderen



Introduction : an evolving context



- Large variety of WI situations are experienced across Europe
- Very few WI issues reported with current situation (NG)
- **BUT** a lot of uncertainties arise for the future due to
 - Diversification of supply sources happening in the context of declining EU production ;
 - Energy transition and decarbonization goals ;
 - Strengthening emissions standards ;
 - ...
- Producers, operators and end users face some **“competing” requirements on gas quality**

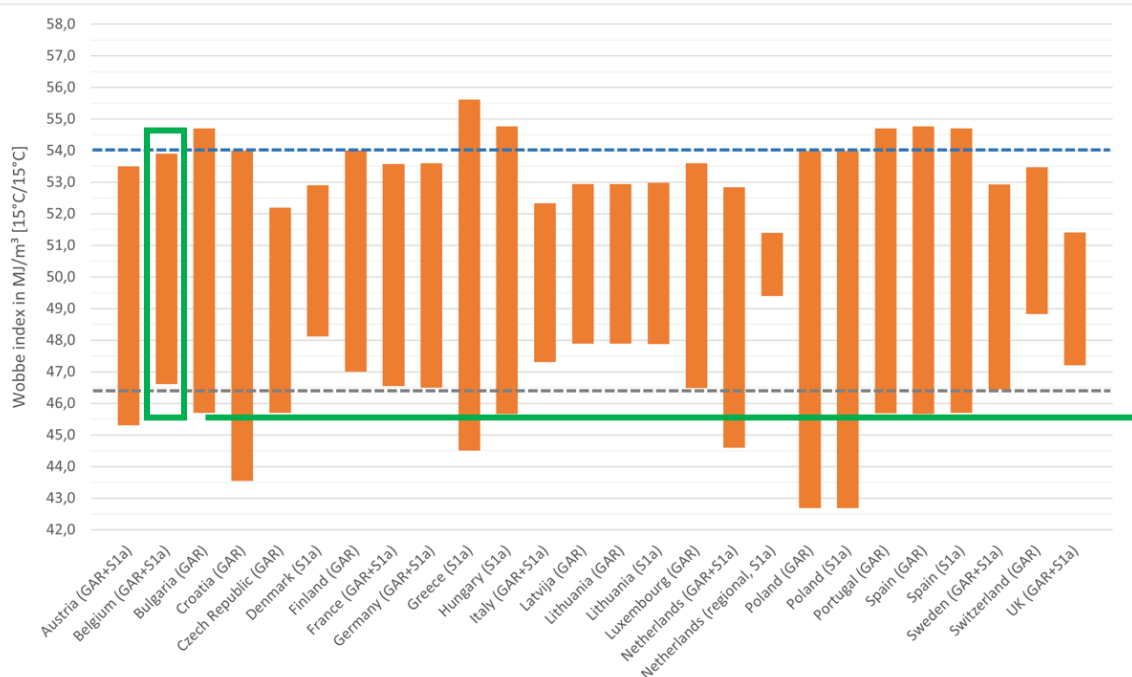
➔ Compromise proposed with a de-coupling of entry and exit WI specifications

CEN Sector Forum Gas – Gas Quality Study : WI specification proposal @ENTRIES

(WI
expressed
in MJ/m³
15°C,15°C)

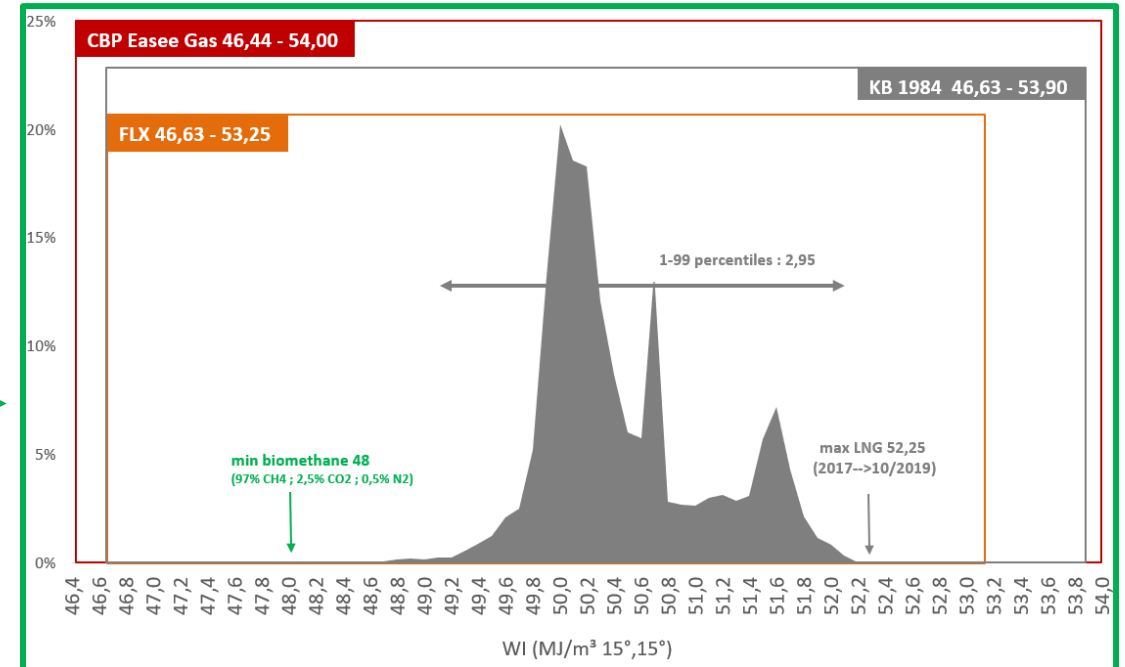
“The WI entry range **should** be within 46,44 and 54,00 MJ/m³”

➔ Recommendation



COUNTRIES - communications GAR annex II and answers to CEN SFGas WG GQS survey 1a

Distribution WI at Belgian entries (2017-2019)



CEN Sector Forum Gas – Gas Quality Study : WI specification proposal @ EXITS supply*

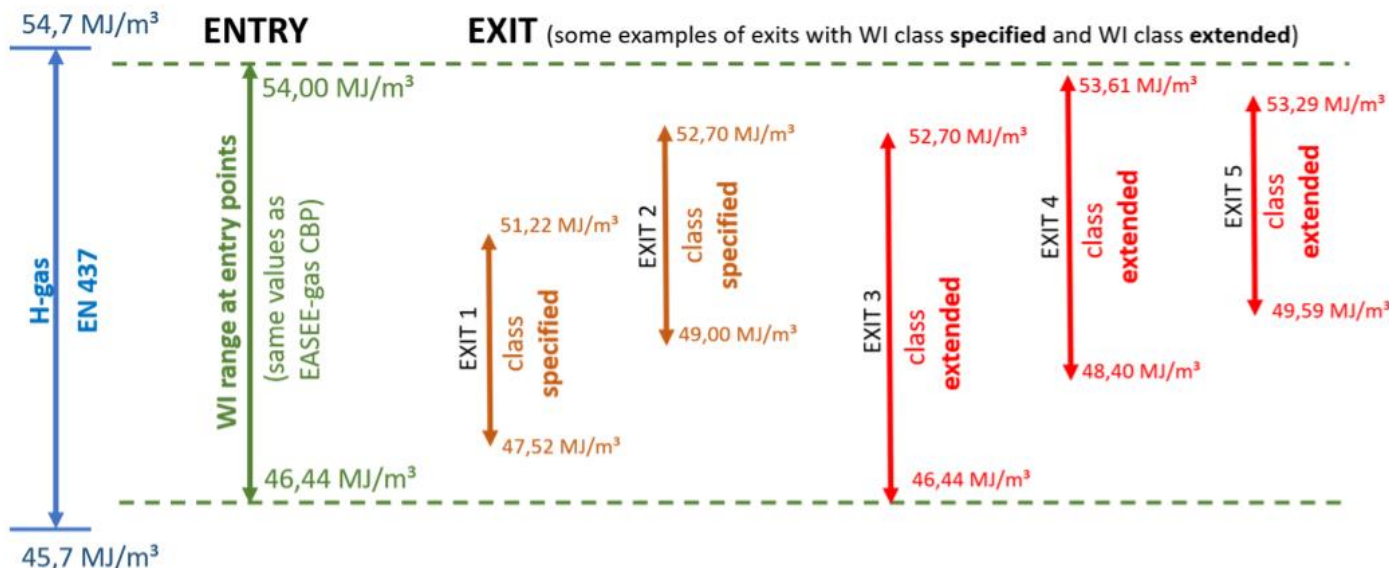
(WI
expressed
in MJ/m³
15°C, 15°C)

“The distributed gases **shall** be classified according to the following table”

→ Requirement

Class	Condition
“Specified”	WI bandwidth $\leq 3,7$ MJ 98% of the time - WI max ≤ 53 MJ/m ³
“Extended”	Any other situation within the WI entry range

Example of exit classes



- Proposed classification system allows end users to optimize application settings to a range of WI that will be respected most of the time (>98%)
- If an end user sensitive to the WI gets classified as “extended”, mitigation measures might be developed
- No requirements proposed on rate of change, even though it is recognized as a major concern for end users
- Regulatory questions elaborated in another less technical forum, the Prime Movers Group (PMG**), Sub Group 1

* Scope covers exits supply at TSO and DSO level

** Lead by EntsoG and DSO associations



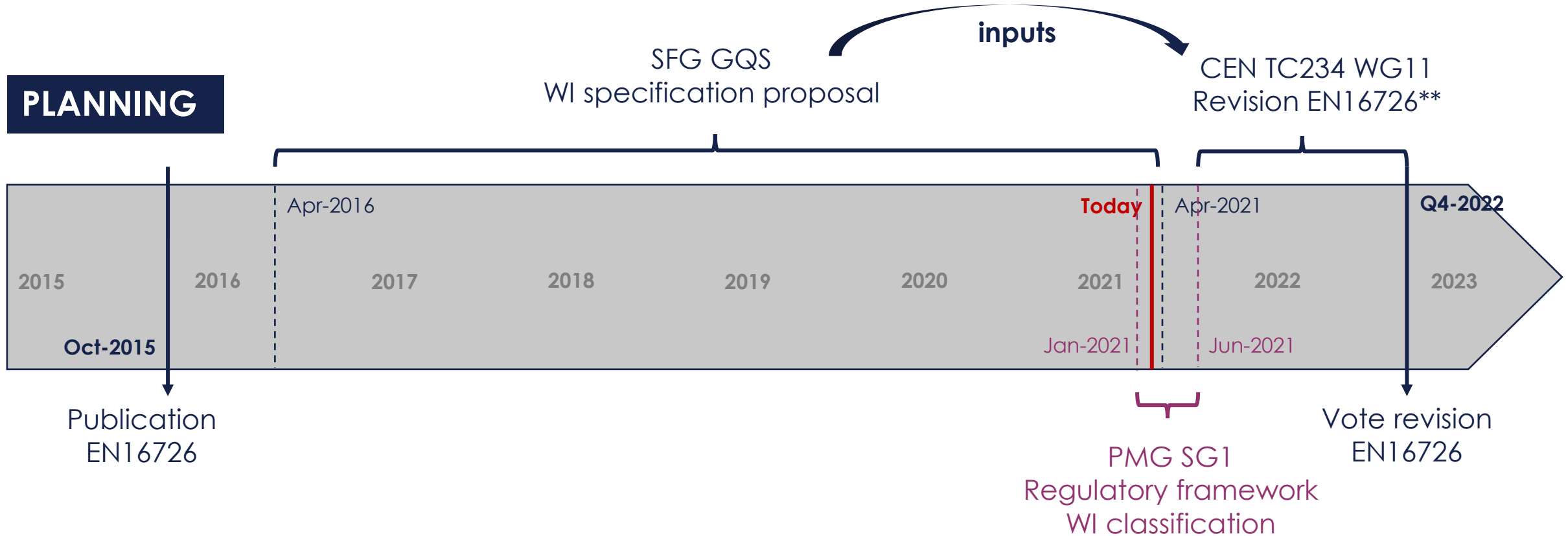
CEN TC234 WG11 – Revision EN16726 (“EU H-gas quality standard”)

Gas infrastructures

Gas Quality*

Current version does not include a Wobbe Index specification

PLANNING

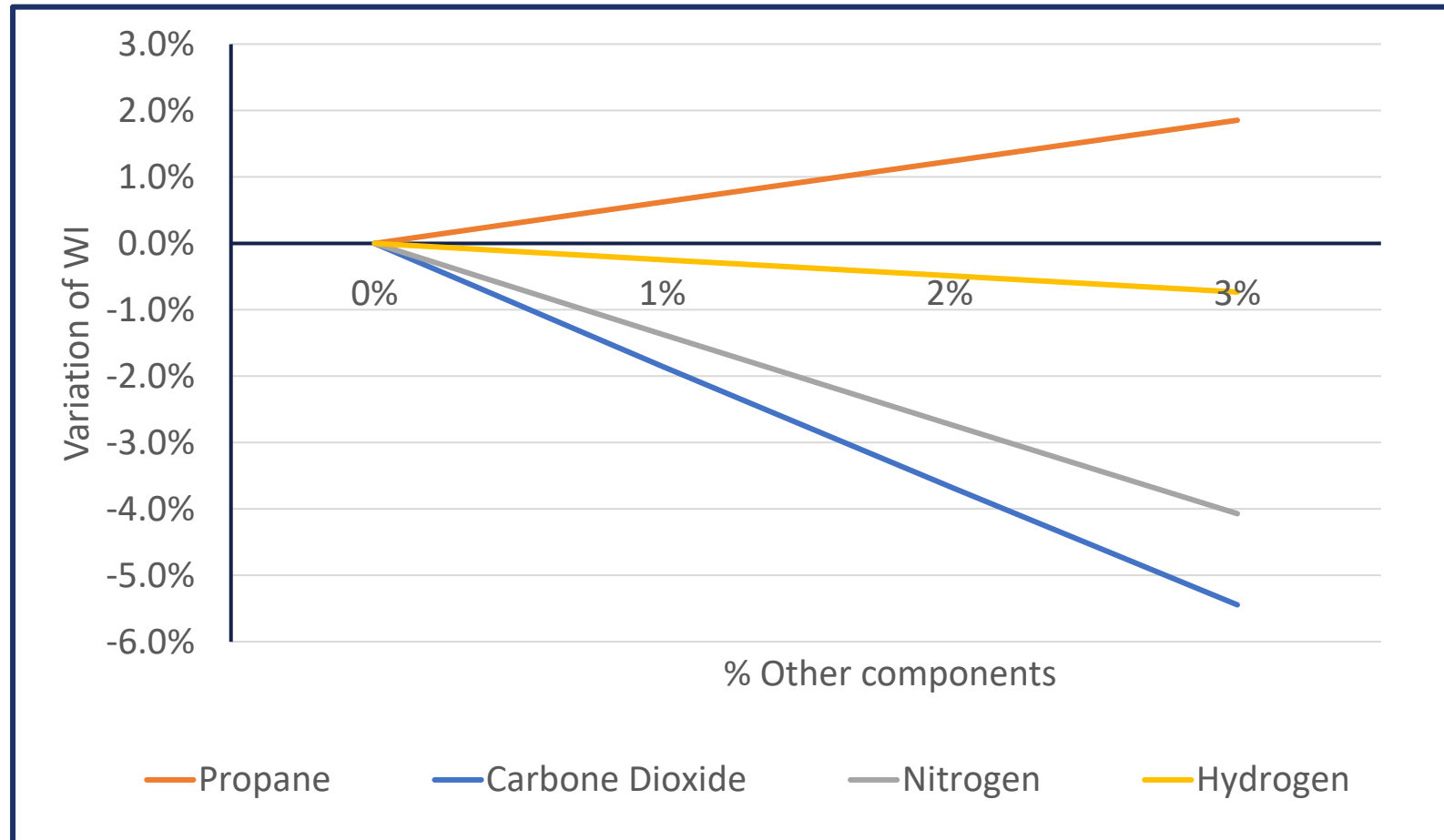


* Same group has started to work on H₂ gas quality specification for pipeline transport (vote end 2023 at the earliest)

** Other parameters that might be added/ revised in upcoming EN16726 revision : GCV (addition) ; Relative density (removal) ; O₂ (increase from 10 ppm) ; H₂ (addition) ; STOT (decrease from 20 mg/m³) ; **Methane Number (increase from 65)**



Impacts other components on WI methane



Wobbe Index variations

Pure	0,0%
Propane 1 %	0,6%
Propane 2 %	1,2%
Propane 3 %	1,9%

Pure	0,0%
Carbone Dioxide 1 %	-1,8%
Carbone Dioxide 2 %	-3,7%
Carbone Dioxide 3 %	-5,4%

Pure	0,0%
Nitrogen 1 %	-1,4%
Nitrogen 2 %	-2,7%
Nitrogen 3 %	-4,1%

Pure	0,0%
Hydrogen 1 %	-0,2%
Hydrogen 2 %	-0,5%
Hydrogen 3 %	-0,7%

- Most efficient way to increase the WI (i.e. for biomethane plant) is to decrease the CO₂ level
- H₂ content variations (between 0 and 2%) will be less impacting in terms of WI and GCV than existing CO₂ content variations (between 0 and 2,5 %)



Concluding remarks

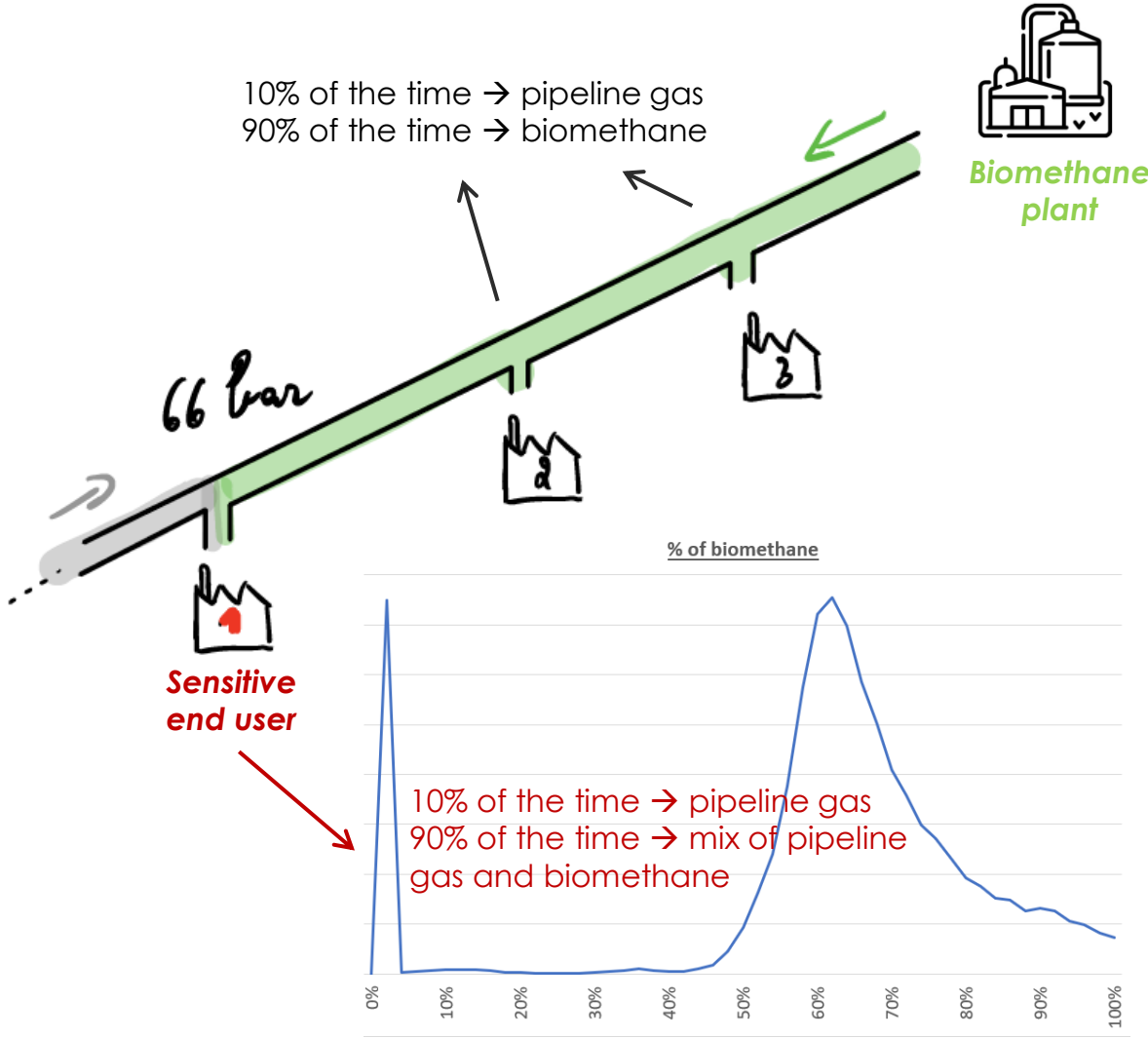
- Work on revision EU H-gas quality standard (EN16726) goes forward at CEN level
- There is still a lot of work to do on regulatory framework to implement WI classification system at exits supply, which is considered as a must have before the proposed revision can be submitted to vote.
- Some elements of that regulatory framework are expected to be integrated in upcoming EU decarbonization package
- If voted, the revision of EN16726 standard could be made binding with a reference in the Interoperability Network Code (applicable to TSOs)
- Fluxys Belgium is currently holding a market consultation that includes a revision of its gas quality specifications → addition of up to 2% H₂ in the Natural Gas



Backup slides

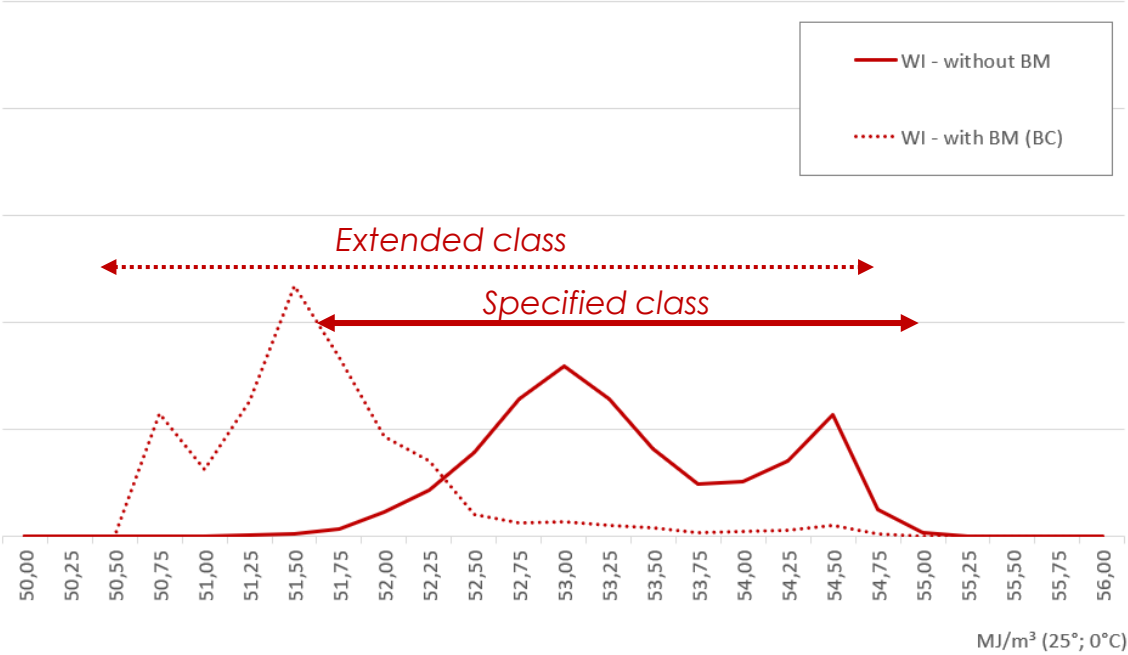


Case study



Flow and gas quality analysis

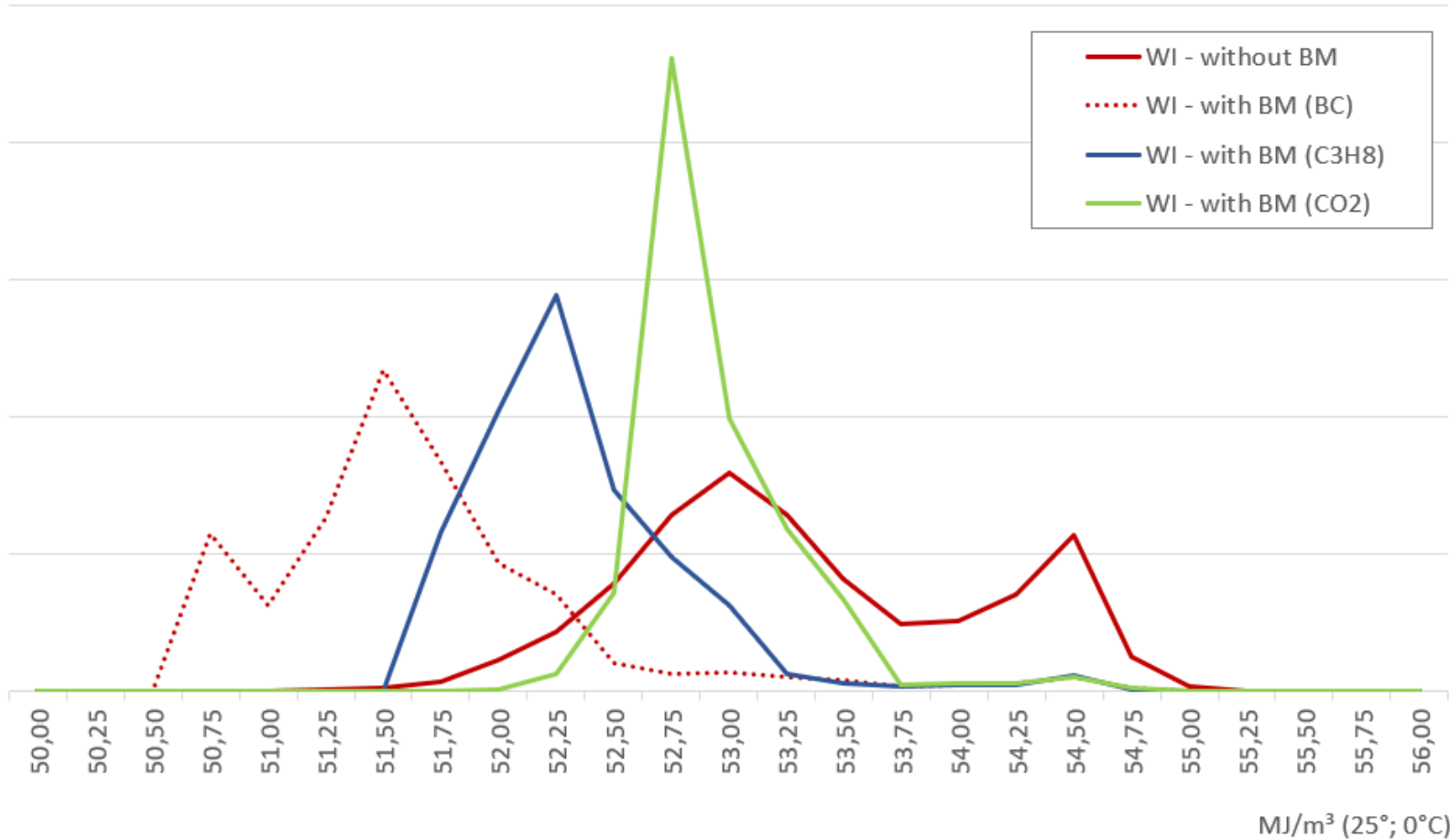
Impact biomethane plant on WI and GCV distributions



Case study

Unit MJ/m³ (25,0)

Impact biomethane plant on WI and GCV distributions



Mitigation measures (WI Range)

C₃H₈ 0% → 3%

CO₂ 2,5% → 0,5%

CO₂ option preferred



Short Update on Certification for Green gasses in BE



26/10/2021

Masterclasses WKK – COGEN Vlaanderen



What kind of certification needs to be set-up by EU

Guarantees of Origin art. 19 RED II

- not for targets or support
- No Sustainability
- Book & Claim
- No GHG reduction

Regional authorities
(VREG, SPW, Brugel)

Due date 1 July 2021
→ Flanders compliant

Renewable certificates Transport art.25 – 30 RED II

- For transport fuel targets (14% energy, 6% GHG reduction)
- With Sustainability
- In Mass balance
- GHG reduction must be 70% vs 94gCO₂/MJ

Federal authorities
(FOD health, FOD energ)

Due date 1 July 2021
→ Transport fuel laws in revision

Renewable certificates ETS art.25 – 30 RED II

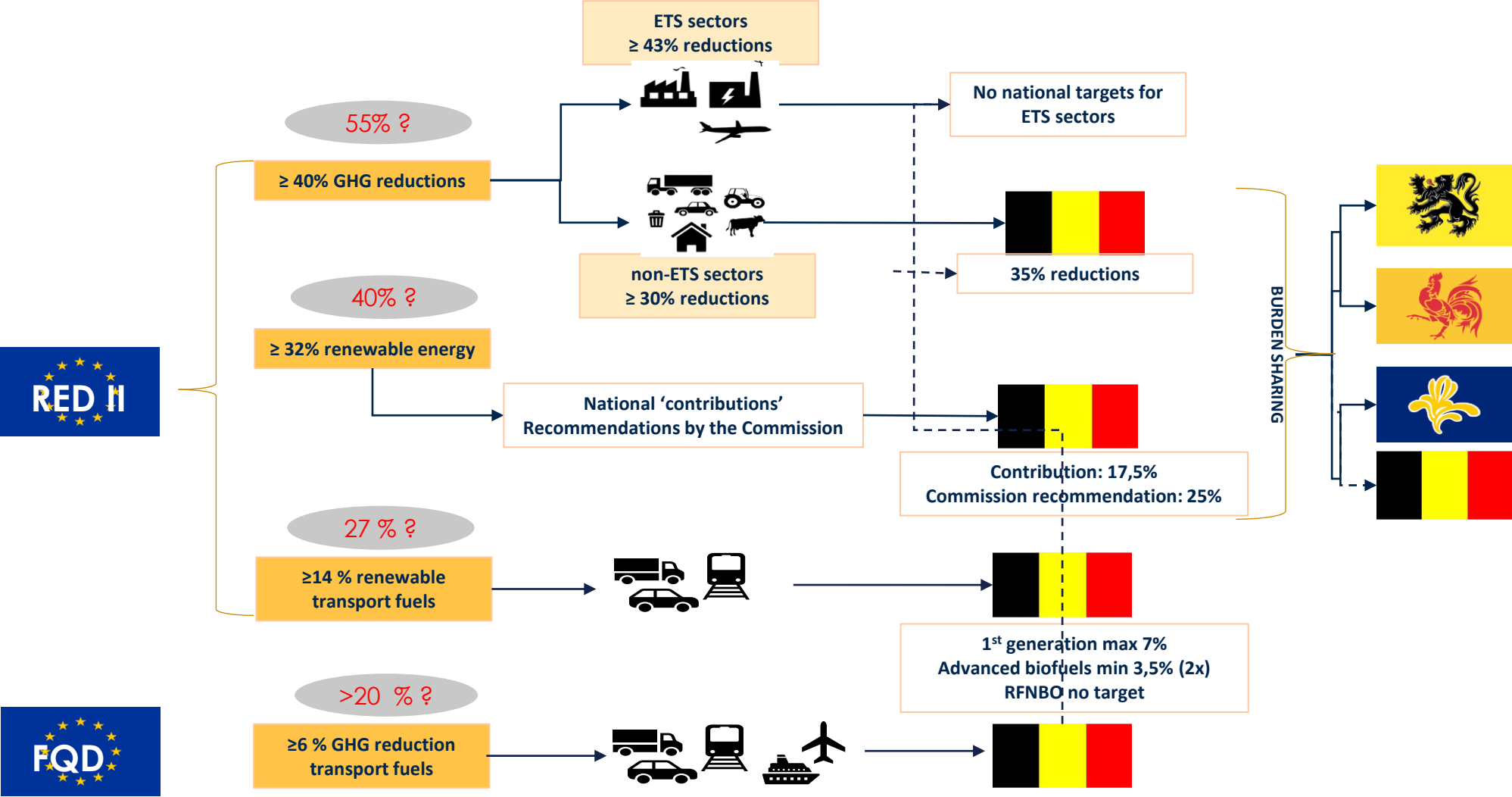
- For ETS purposes
- With proof of purchase
- With Sustainability
- In Mass balance
- GHG reduction must be 70% vs 94gCO₂/MJ

Regional authorities
(VEKA, AWAC, ...)

Due date 1 Jan 2022
→ VEKA procedure will be ready



Overview of current RED II targets → increase in Draft RED III



Important revision by EU

Guarantees of Origin: no changes (RED III)

Renewable Transport fuels: *revision in RED III (= RED II recast)*

- Increase to 27 % ?? energy (draft RED III)
- Increase to > 20% ?? (draft Fuel Quality Directive)
- RTFNBO's → additionality, geographical and temporal link (draft Delegated Acts)
- No more double counting (draft RED III)
- Minimum taxation for fossil transport fuels (draft ETD)

ETS: *current MRR in force 1/01/2021 but new revision in FIT for 55*

- Introduction of Hydrogen (draft revised MRR II)
- ETS broadened → Aviation, Ships under ETS ??

UNION Database *(due date 2023 ??)*

- For all target related proofs (transport fuels, ETS, ...) a union database will be center of certification (not GO system)



Thank you for your attention

