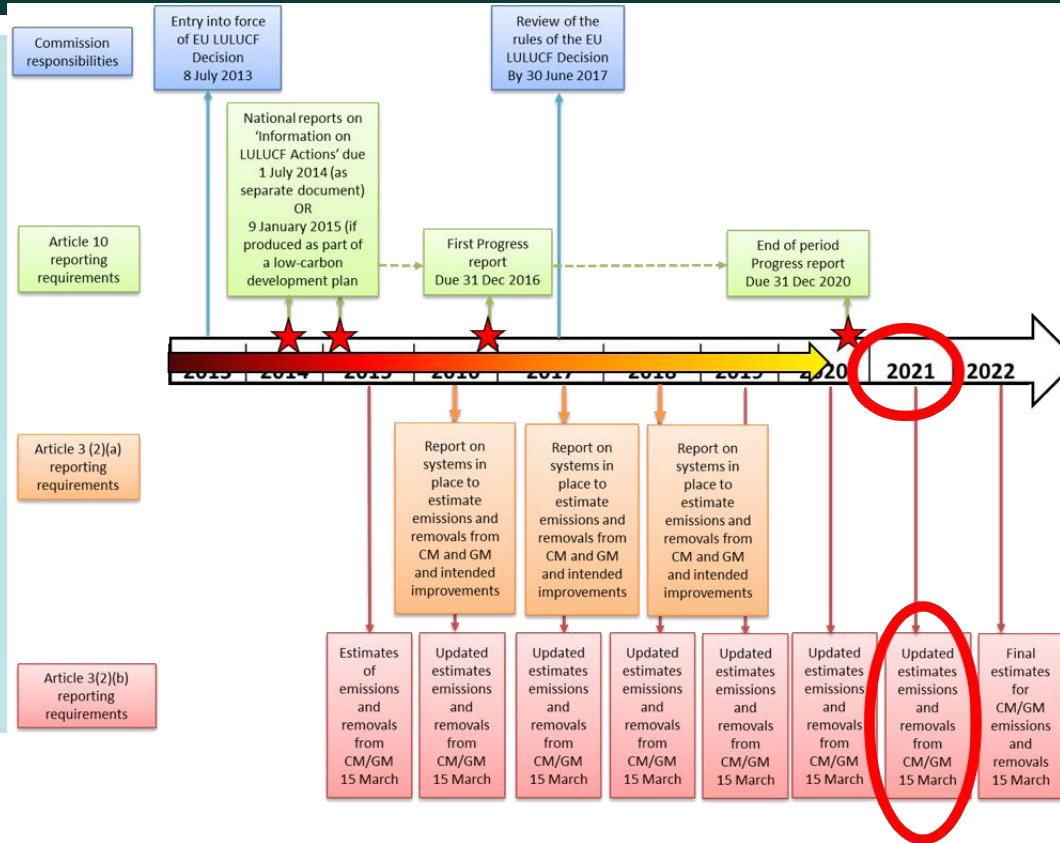


Review of the 2021 submission under Decision 529/2013

Simone Rossi, Raul Abad-Viñas, Giacomo Grassi
Joint Research Centre

Decision 529/2013 roadmap: where are we?



Decision 529/2013 - Status of the submissions 2021

Submissions uploaded on EIONET

Red: missing

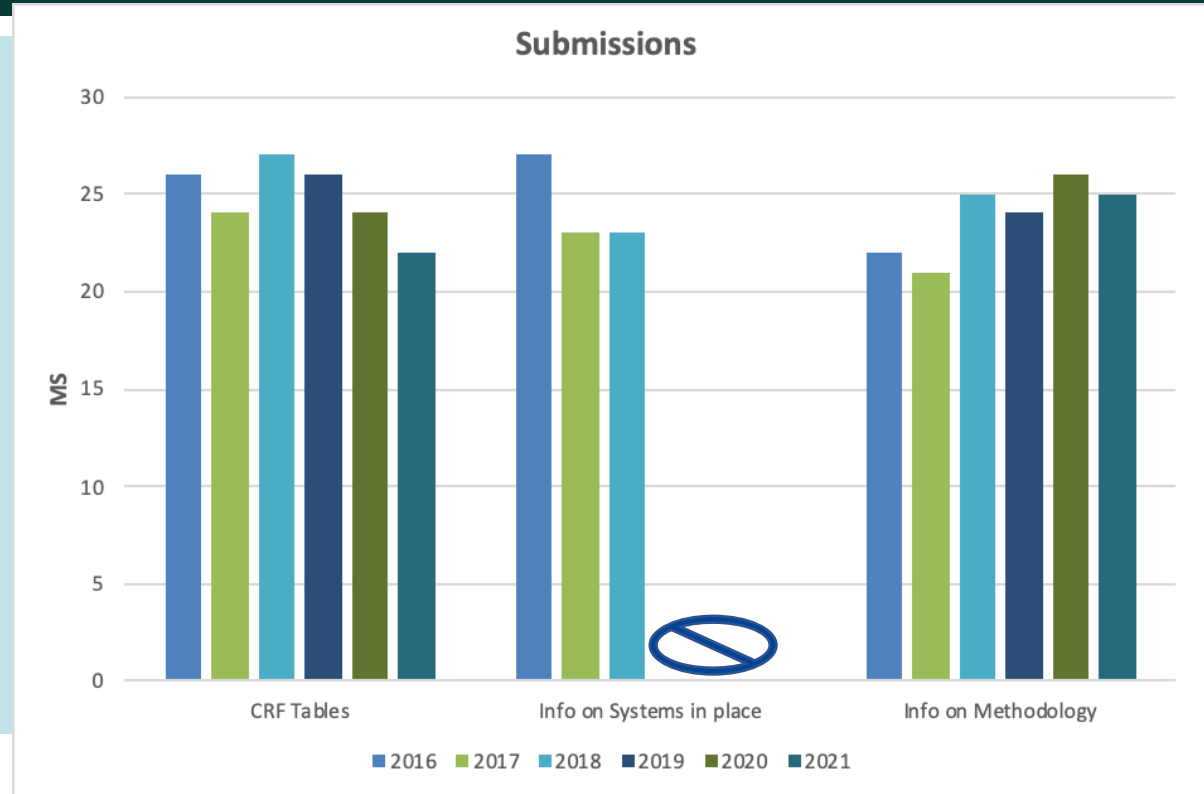
Light grey: MS
elected CM and/or
GM

Dark grey: No
compulsory this
year

	2021		
	530 / 3(2)a (systems)	529/3(2)b (CRF tables)	749 / 40 (methodologies)
AT		✓	✓
BE		✓	✓
BG	✓		✓
CY			
CZ	✓	✓	✓
DE		✓	✓
DK		✓	✓
EE		✓	✓
GR		✓	✓
ES		✓	✓
FI		✓	✓
FR			
HR	✓	✓	✓
HU		✓	✓
IE		✓	✓
IT		✓	✓
LT		✓	✓
LU		✓	✓
LV		✓	✓
MT			✓
NL		✓	✓
PL		✓	✓
PT		✓	✓
RO			✓
SE		✓	✓
SI		✓	✓
SK		✓	✓

Decision 529/2013 - Status of the submissions

- NB: 27 MS from 2020.
- Format issues!!! (naming conventions, etc)
- Decrease in the number of complete submissions



Cropland Management: Completeness (Notation Keys)

CM	CHANGE IN CARBON POOL REPORTED ⁽¹⁾						GREENHOUSE GAS SOURCES REPORTED ⁽²⁾								
	Above-ground biomass	Below-ground biomass	Litter	Dead wood	Soil		HWP ⁽⁴⁾	Fertilization ⁽⁵⁾	Drained, rewetted and other soils ⁽⁶⁾		Nitrogen mineralization in mineral soils ⁽⁶⁾	Indirect N ₂ O emissions from managed soil ⁽⁵⁾	Biomass burning ⁽⁹⁾		
					Mineral	Organic ⁽³⁾		N ₂ O	CH ₄ ⁽⁷⁾	N ₂ O			N ₂ O	N ₂ O	CO ₂ ⁽¹⁰⁾
Austria	R	R	NA	NA	R	NO		NA		R		NA	NA	NA	
Belgium	R	NO	NO	NO	R	R		NO		R		NO	NO	NO	
Bulgaria	NA	NA	NA	NA	NA	NA		NA		NA		NA	NA	NA	
Croatia	R	R	NO	NO	R	R		NO		R		R	R	R	
Cyprus															
Czech Republic	NA/R	NA/R	NA/R	NA/R	NA/R	NA/R		NA/NO		NA/R		NA/NO	NA/NO	NA/NO	
Denmark		R	R	NO	NO	R	R		R		R		NO	NO	NO
Estonia	R	R	NO, NE	R	R	R		NA		R		NO, NE	NO, NE	NO, NE	
Finland		R	R	R	R	R			R		R		IE	IE	IE
France															
Germany		R	R	IE	IE	R	R		R		R		NO	NO	NO
Greece	R	IE	NO	NO	R	R		NO		R		NO	NO	NO	
Hungary	R	NA	NA	NA	R	NA		NA		R		IE	R	R	
Ireland	R	IE	NO	NO	R	NO		NO		IE		NO	R	R	
Italy	R	R	NO	NO	R	R		NO		R		R	R	R	
Latvia	R	R	NA	R	R	R		R		R		NA	R	R	
Lithuania	R	IE	R	NO	R	R		R		R		NO	R	R	
Luxembourg	R	R	NO	NO	R	NA		NA		NA		NA	NA	NA	
Malta	NA	NA	NA	NA	NA	NA		NA		NA		NA	NA	NA	
Netherlands	R	R	NO	NO	R	R		NE		R		NO	NO	NO	
Poland	R	R	NR	NR	R	R		NO		NO		NO	NO	NO	
Portugal	R	R	R	NO	R	NO		NO		R		R	R	R	
Romania	NA	NA	NA	NA	NA	NA		NA		NA		NA	NA	NA	
Slovakia	R	NO	NO	NO	R	NO,NE		NO		R		NO	NO	NO	
Slovenia	R	R	R	R	R	R		NO		R		NO	NO	NO	
Spain	R	IE	NR,R	NR	R	NO		NO		NE,R		NO,R	IE,NO,R	IE,NO,R	
Sweden	R	R	R	R	R	R		R		R		R	R	R	



Cropland Management: Completeness

CM	CHANGE IN CARBON POOL REPORTED ⁽¹⁾						GREENHOUSE GAS SOURCES REPORTED ⁽²⁾							
	Above-ground biomass	Below-ground biomass	Litter	Dead wood	Soil		Fertilization ⁽⁵⁾	Drained, rewetted and other soils ⁽⁶⁾		Nitrogen mineralization in mineral soils ⁽⁸⁾	Indirect N ₂ O emissions from managed soil ⁽⁵⁾	Biomass burning ⁽⁹⁾		
					Mineral	Organic ⁽³⁾		N ₂ O	CH ₄ ⁽⁷⁾			N ₂ O	N ₂ O	N ₂ O
R	21	14	5	5	21	14		6		17		4	8	8
NO	0	2	9	11	0	4		10		1		10	8	8
NA	3	4	6	5	3	5		7		4		6	5	5
NE	0	0	0	0	0	0		1		0		0	0	0
NR	0	0	1	2	0	0		0		0		0	0	0
IE	0	4	1	1	0	0		0		1		2	1	1
Tot	24	24	22	24	24	23		24		23		22	22	22
Not Complete	2	2	2	2	2	2		2		2		2	2	2
Not correct	1	1	3	1	1	2		1		2		3	3	3

- ✓ AG Biomass and mineral soils pools are reported most often.

Grazing Land Management: Completeness

GM	CHANGE IN CARBON POOL REPORTED ⁽¹⁾						GREENHOUSE GAS SOURCES REPORTED ⁽²⁾								
	Above-ground biomass	Below-ground biomass	Litter	Dead wood	Soil		HWP ⁽⁴⁾	Fertilization ⁽⁵⁾ N ₂ O	Drained, rewetted and other soils ⁽⁶⁾		Nitrogen mineralization N ₂ O	Indirect N ₂ O emissions N ₂ O	Biomass burning ⁽⁹⁾		
					Mineral	Organic ⁽³⁾			CH ₄ ⁽⁷⁾	N ₂ O			CO ₂ ⁽¹⁰⁾	CH ₄	N ₂ O
Austria	R	R	R	R	R	R		R		R		R	R	R	
Belgium	R	R	NO	NO	R	R		R		R		NO	NO	NO	
Bulgaria	NA	NA	NA	NA	NA	NA		NA		NA		NA	NA	NA	
Croatia	R	R	NO	NO	R	R		NO		NO		R	R	R	
Cyprus															
Czech Republic	NA/R	NA/R	NA/R	NA/R	NA/R	NA/R		NA/NO		NA/NO		NA/NO	NA/NO	NA/NO	
Denmark	R	R	NO	NO	R	R		R		R		R	R	R	
Estonia	R	R	NO	R	R	R		NA		NO		IE, NO	R	R	
Finland	R	R	R	R	R	R		R		R		R	R	R	
France	R	R	R	R	R	R		R		R		R	R	R	
Germany	R	R	IE	IE	R	R		R		R		NO	NO	NO	
Greece	R	IE	NO	NO	R	NO		NO		R		NO	R	R	
Hungary	NA	NA	NA	NA	R	NA		NA		R		IE	R	R	
Ireland	R	IE	NO	NO	R	R		R		IE		NO	R	R	
Italy	NO	NO	NO	NO	R	NO		NO		NO		NO	NO	NO	
Latvia	R	IE	NA	R	R	R		R		R		NA	R	R	
Lithuania	R	IE	R	NO	R	R		R		NO		NO	R	R	
Luxembourg	R	R	NO	NO	R	NA		NA		NA		NA	NA	NA	
Malta	NO	NO	NO	NO	NO	NO		NO		NO		NO	NO	NO	
Netherlands	R	R	NO	NO	R	R		NE		R		R	R	R	
Poland	R	R	R	R	R	R		NO		NO		R	R	R	
Portugal	R	R	R	NO	R	NO		NO		R		R	R	R	
Romania	NA	NA	NA	NA	NA	NA		NA		NA		NA	NA	NA	
Slovakia	R	NO	NO	NO	R	NO		NO		R		NO	NO	NO	
Slovenia	R	R	R	R	R	NO		NO		NO		NE	NE	NE	
Spain	NR	NR	NR	NR	R	NO		NO		NE		NE	NE	NE	
Sweden	R	R	R	R	R	R		R		R		R	R	R	

Grazing Land Management: Completeness

GM	CHANGE IN CARBON POOL REPORTED ⁽¹⁾						GREENHOUSE GAS SOURCES REPORTED ⁽²⁾							
	Above-ground biomass	Below-ground biomass	Litter	Dead wood	Soil		Fertilization ⁽⁵⁾	Drained, rewetted and other soils ⁽⁶⁾		Nitrogen mineralization in mineral soils ⁽⁸⁾	Indirect N ₂ O emissions from managed soil ⁽⁵⁾	Biomass burning ⁽⁹⁾		
					Mineral	Organic ⁽³⁾		N ₂ O	CH ₄ ⁽⁷⁾			N ₂ O	N ₂ O	N ₂ O
R	20	15	9	9	23	15		10		13		9	15	15
NO	2	3	11	12	1	7		9		7		8	5	5
NA	3	3	4	3	2	4		6		4		5	4	4
NE	0	0	0	0	0	0		1		1		2	2	2
NR	1	1	1	1	0	0		0		0		0	0	0
IE	0	4	1	1	0	0		0		1		2	0	0
Tot	26	26	26	26	26	26		26		26		26	26	26
Not Complete	1	1	1	1	1	1		1		1		1	1	1
Not correct	0	0	0	0	0	0		0		0		0	0	0

✓ Mineral soils pool is reported most often, followed by AG biomass.

Completeness of submissions

Cropland management (CM) and Grazing land management (GM)

- Tables submitted by 22 MS (24 MS in 2020, 26 MS in 2019, 25 in 2017 and 2018, 24 in 2016)
- Tables not submitted by 5 MS (of these, 3 MS submitted empty tables for CM and GM)
- 25 MS out of 27 MS submitted methodological information (26 in 2020).

The most used notation keys for CM and GM:

- R - reported and NO – not occurring

The most reported carbon pools for CM and GM:

- above ground biomass, mineral soil

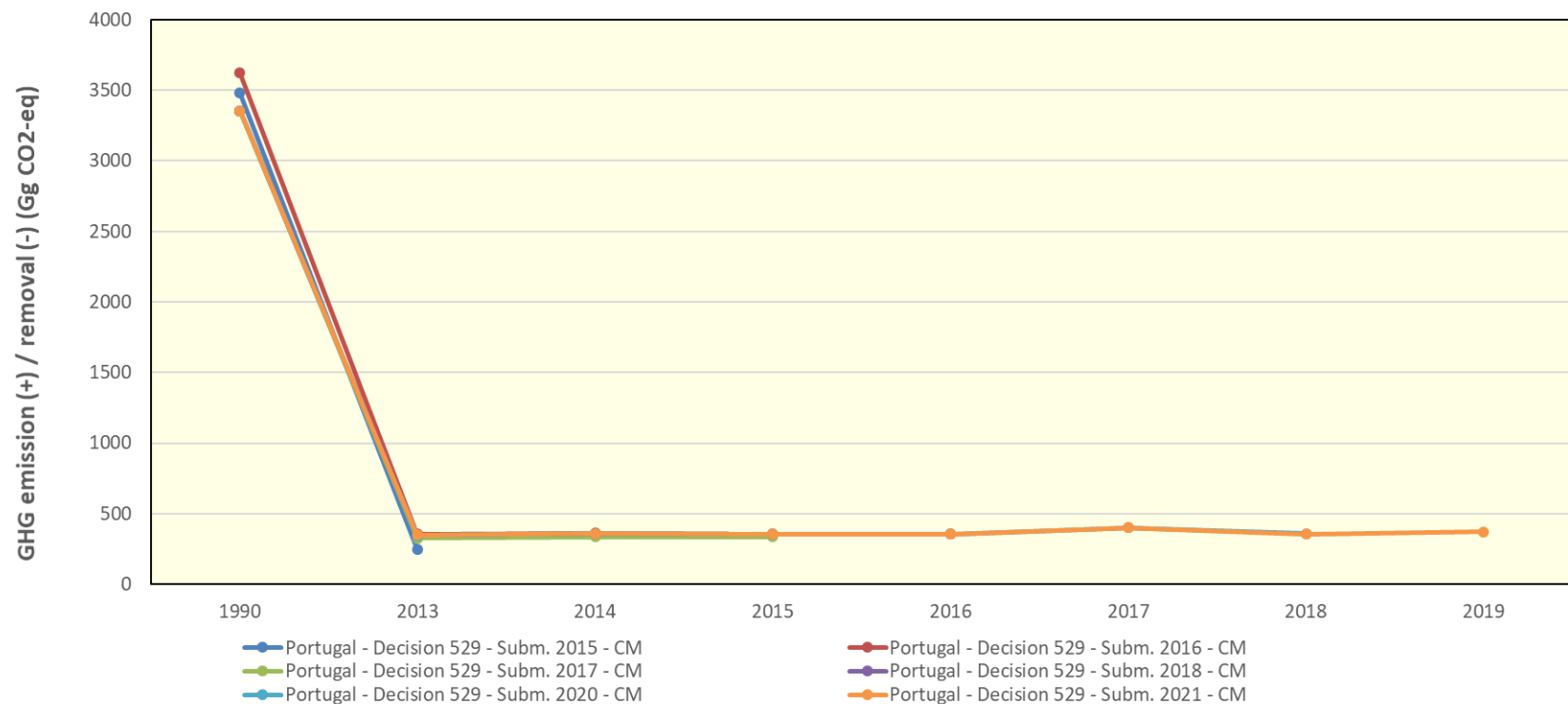
The most reported Non-CO2 sources for CM

- Nitrogen mineralization of soils - N₂O

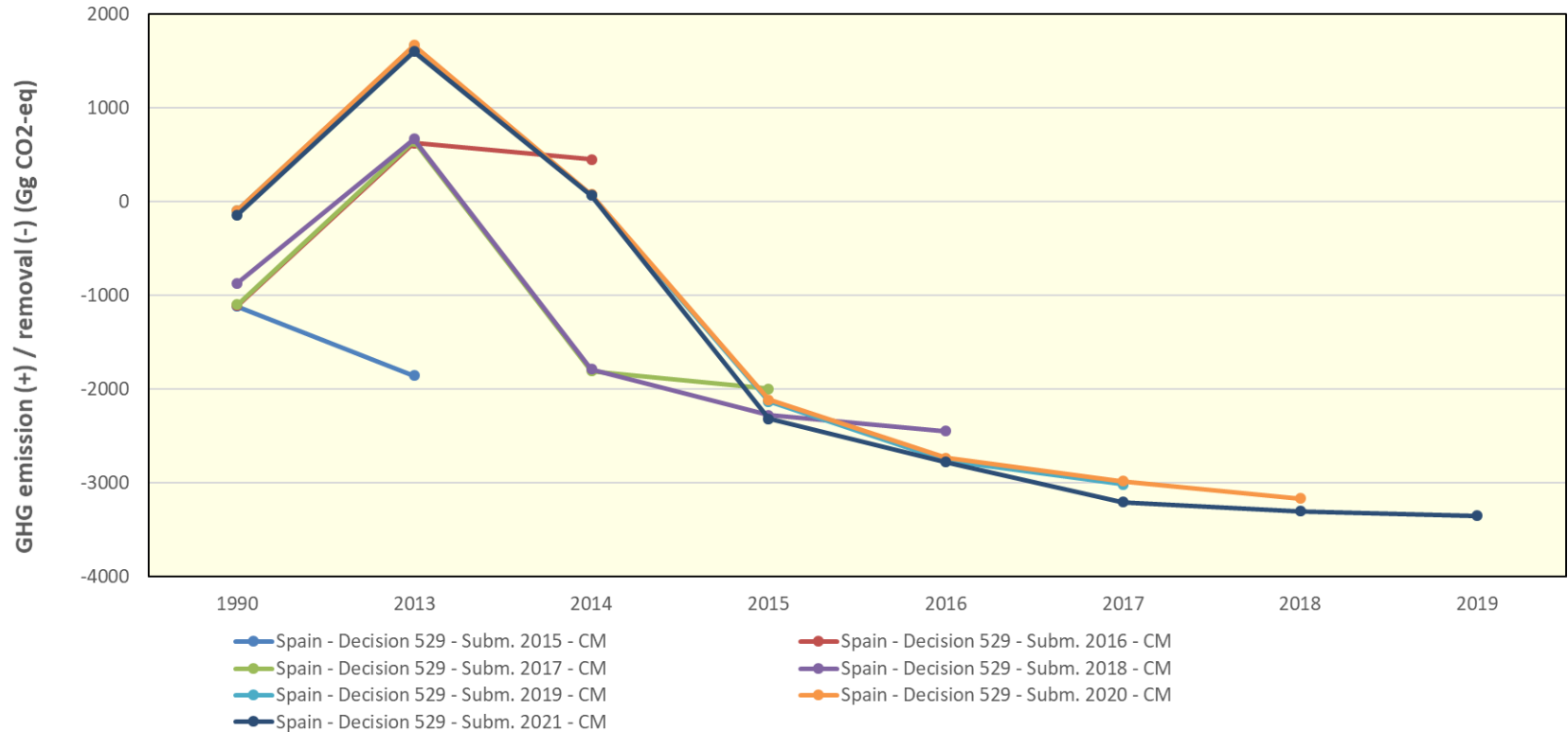
The most reported Non-CO2 sources for GM:

- Biomass burning - CH₄, N₂O

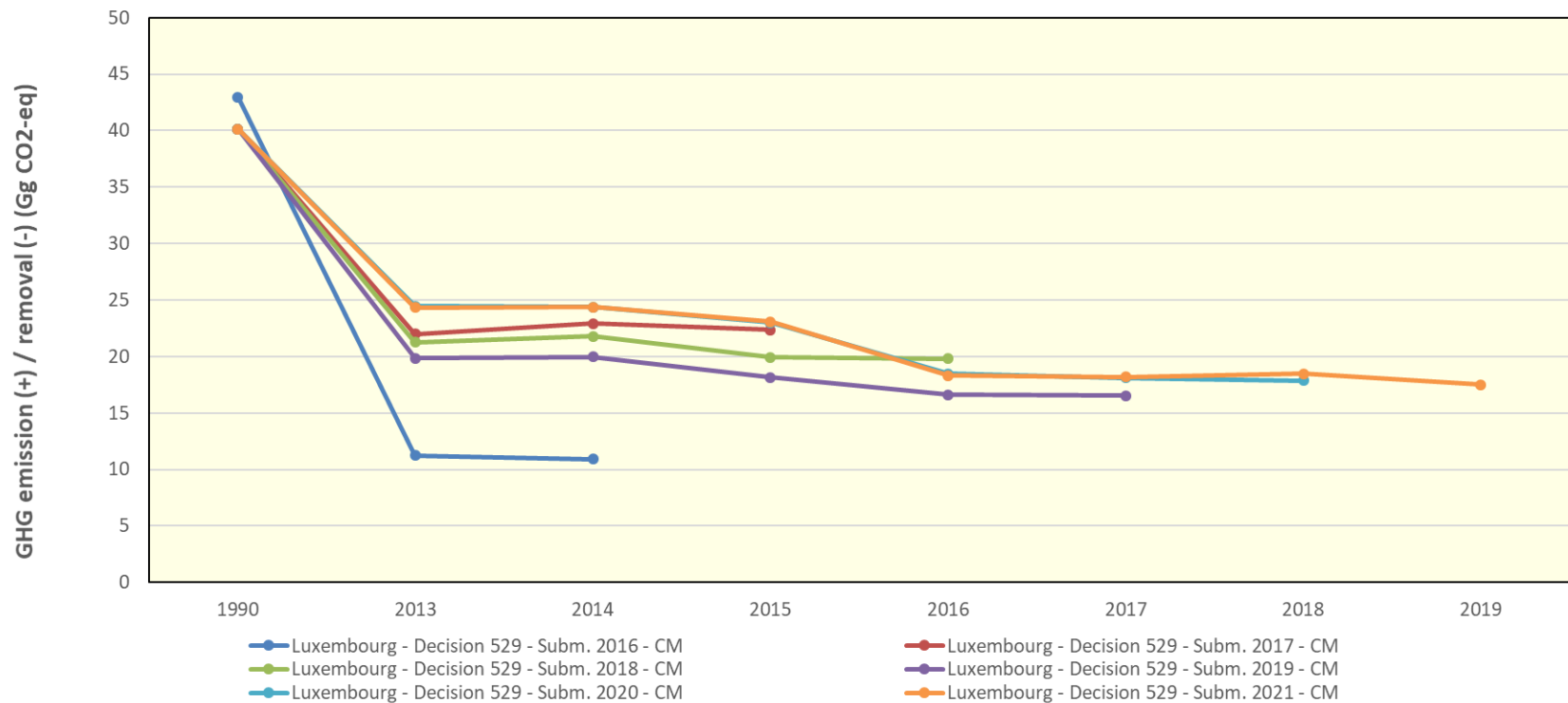
Differences among submissions: examples



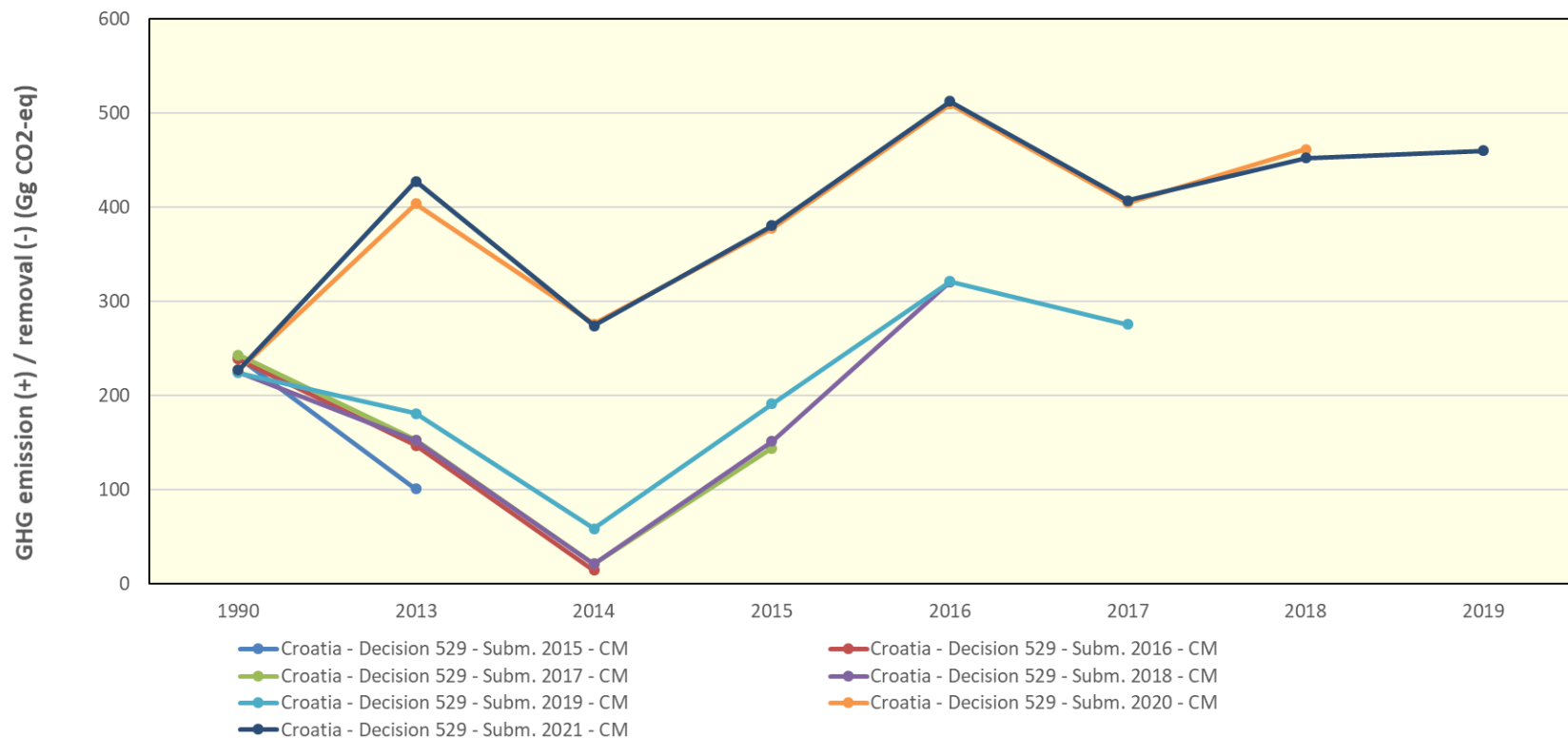
Differences among submissions: examples



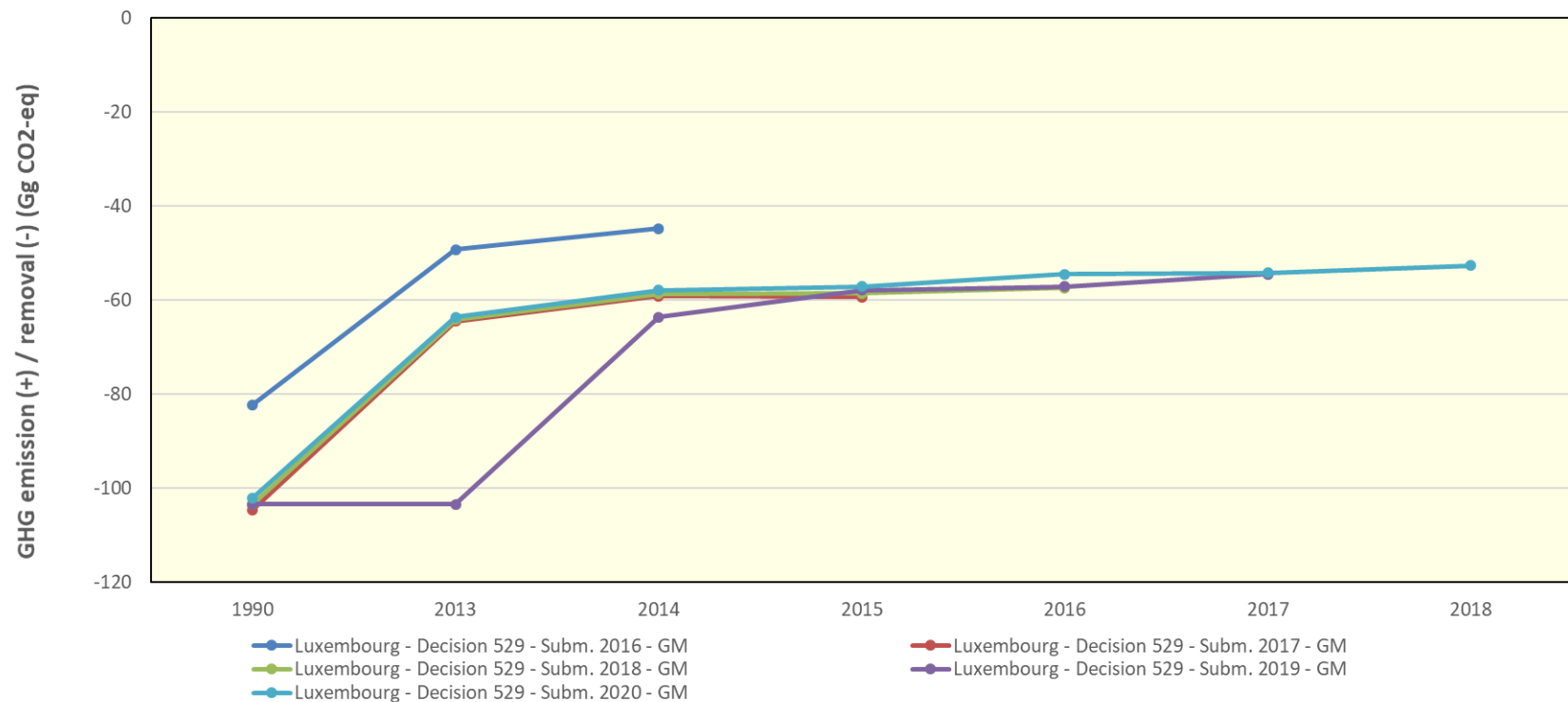
Differences among submissions: examples



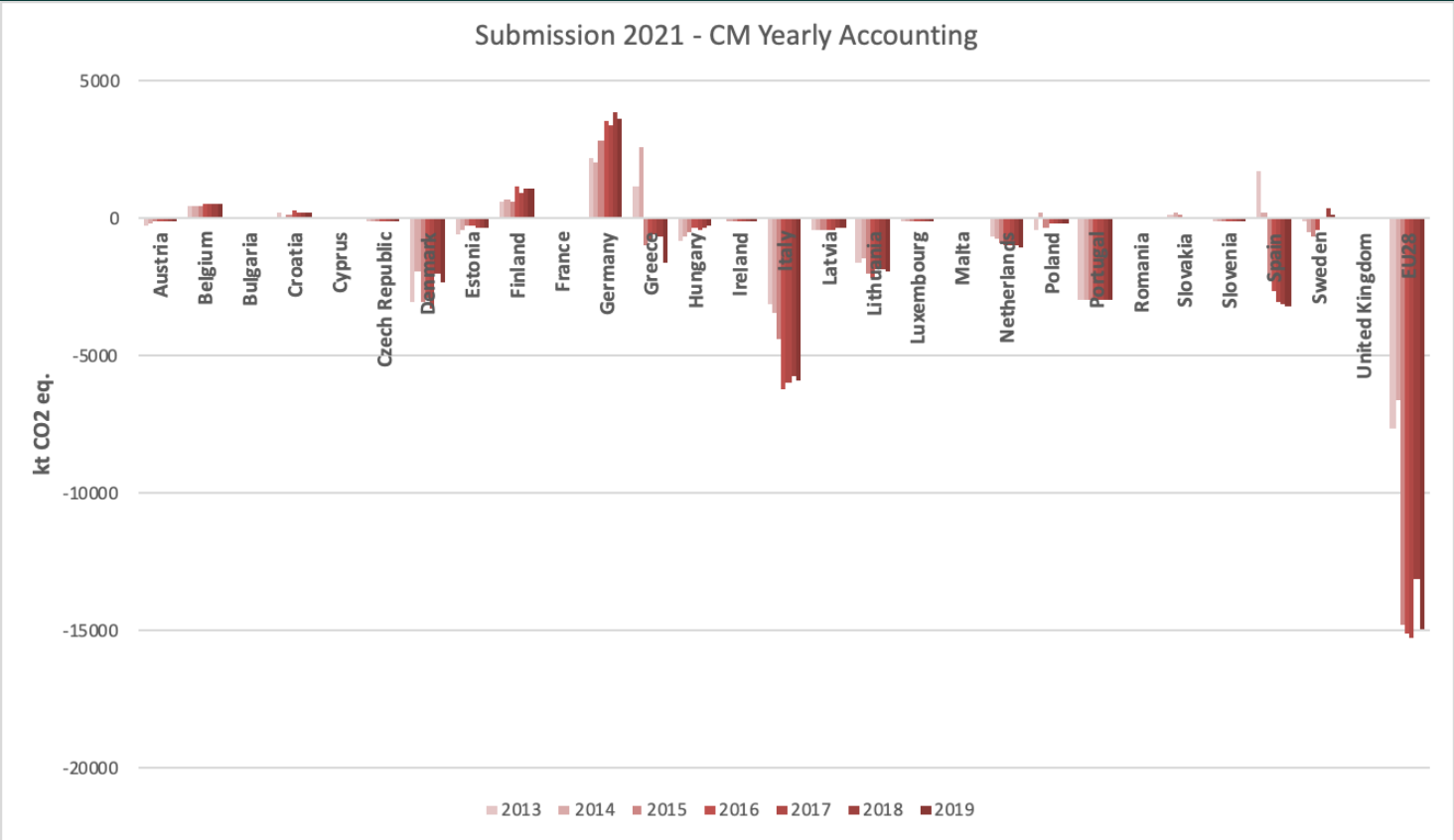
Differences among submissions: examples



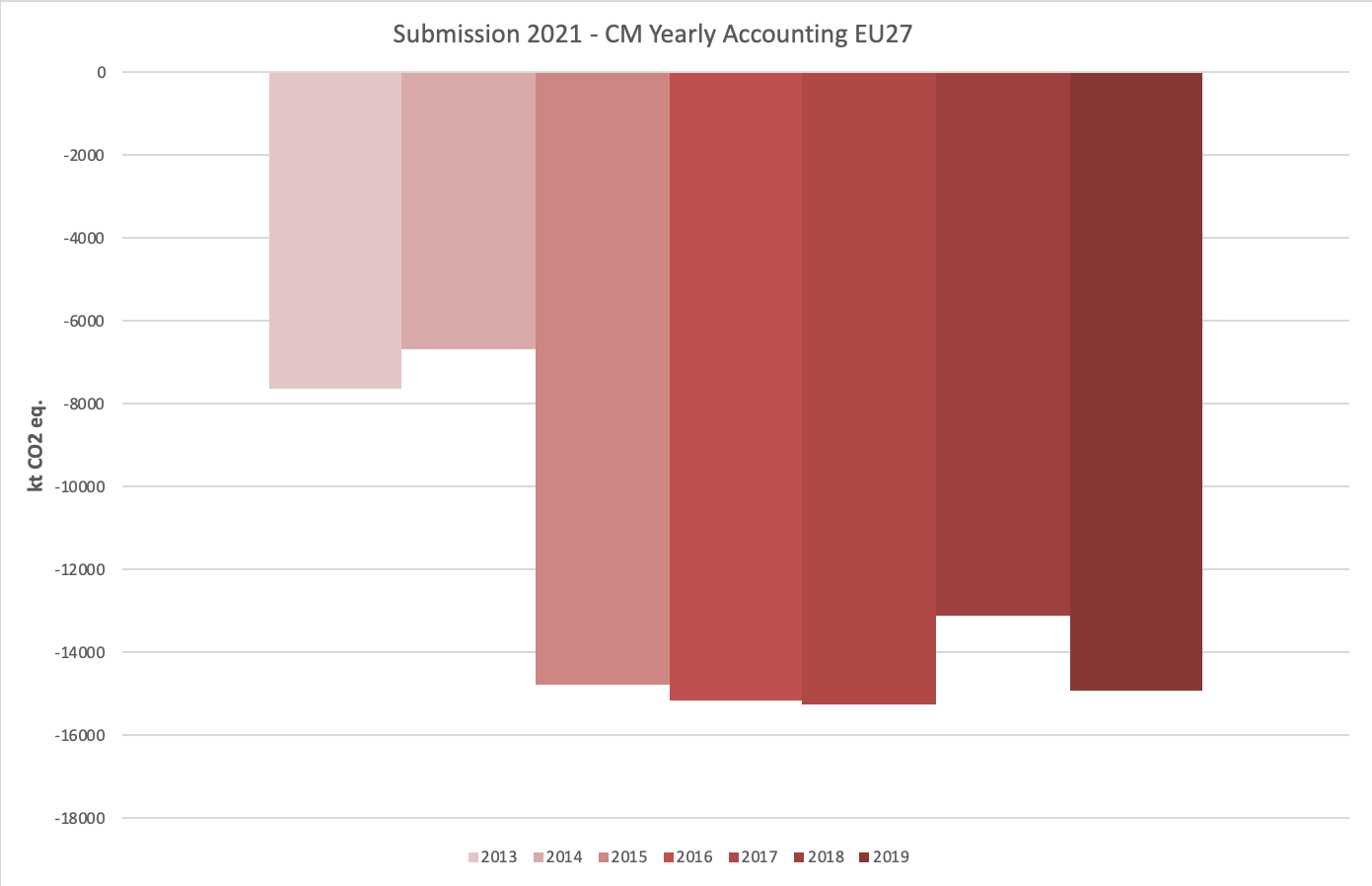
Differences among submissions: examples



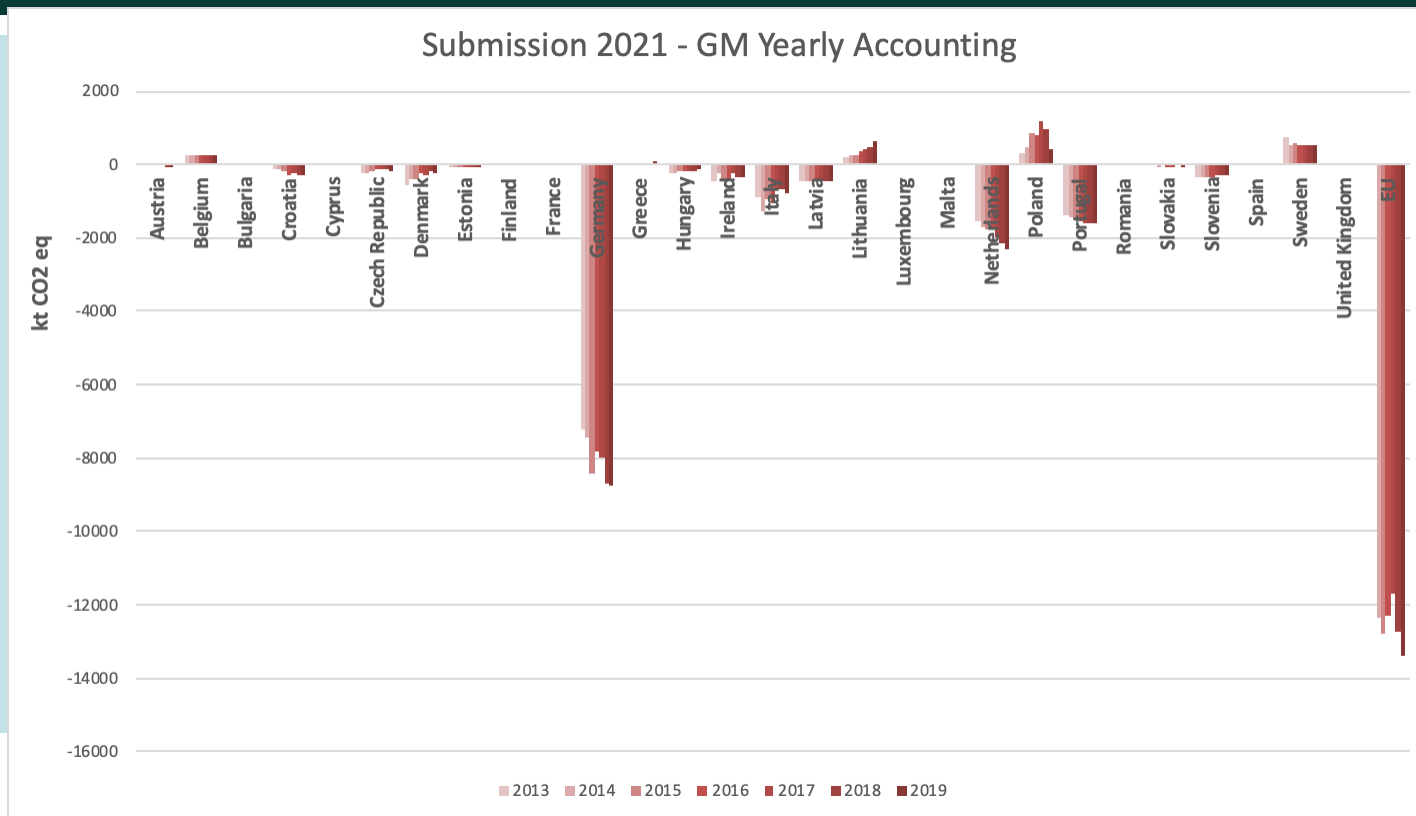
Accounting



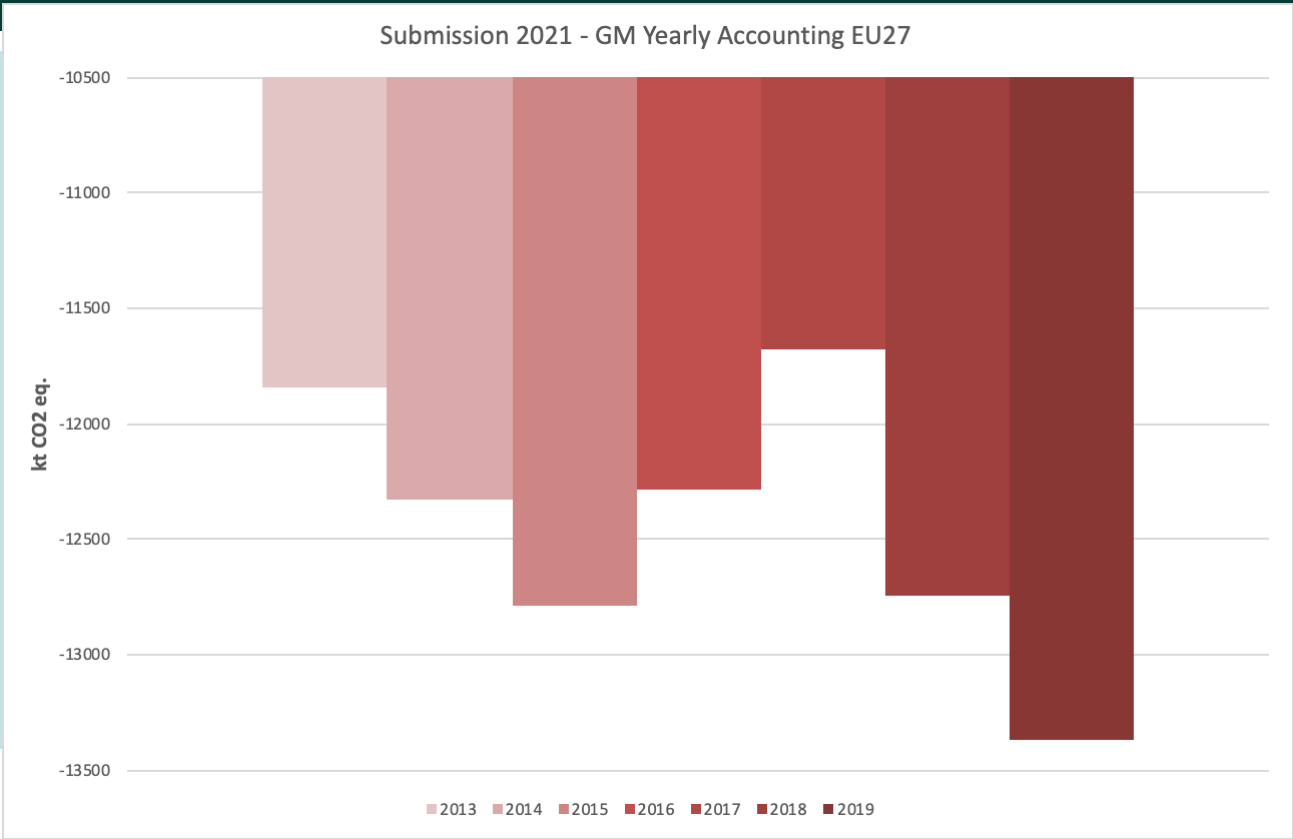
Accounting – EU27 totals – Cropland Management



Accounting

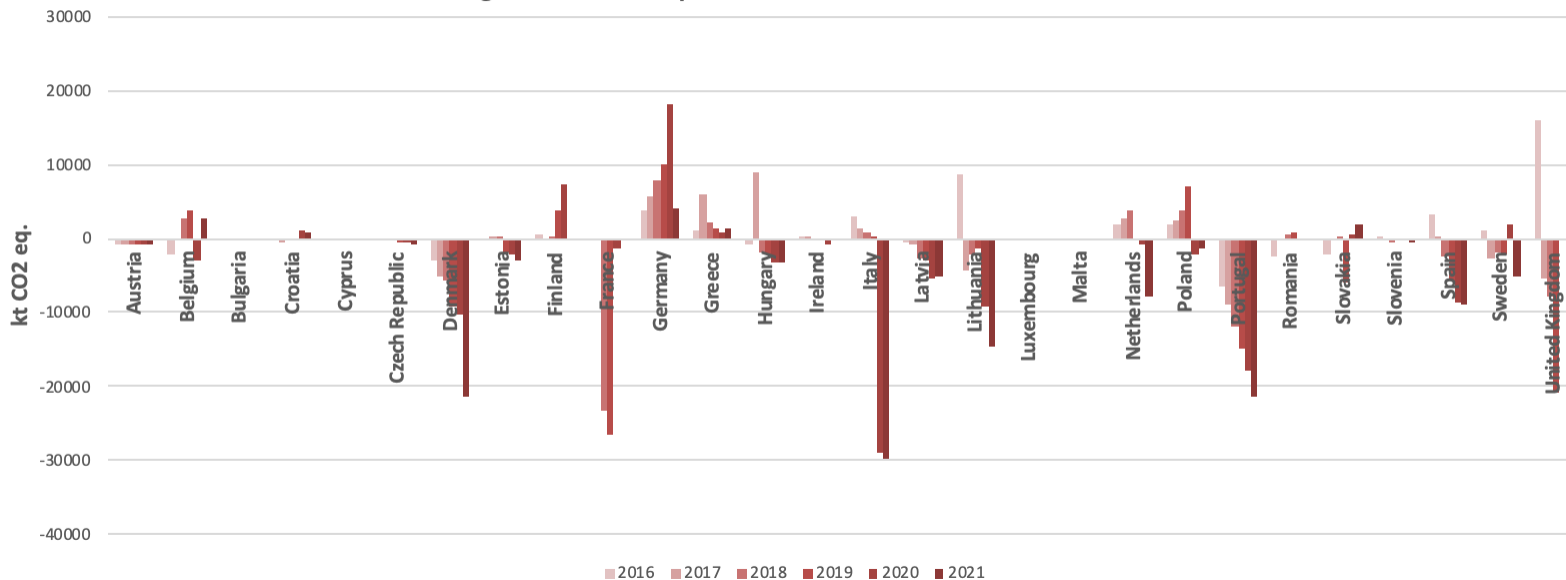


Accounting – EU27 totals – Grazing Land Management

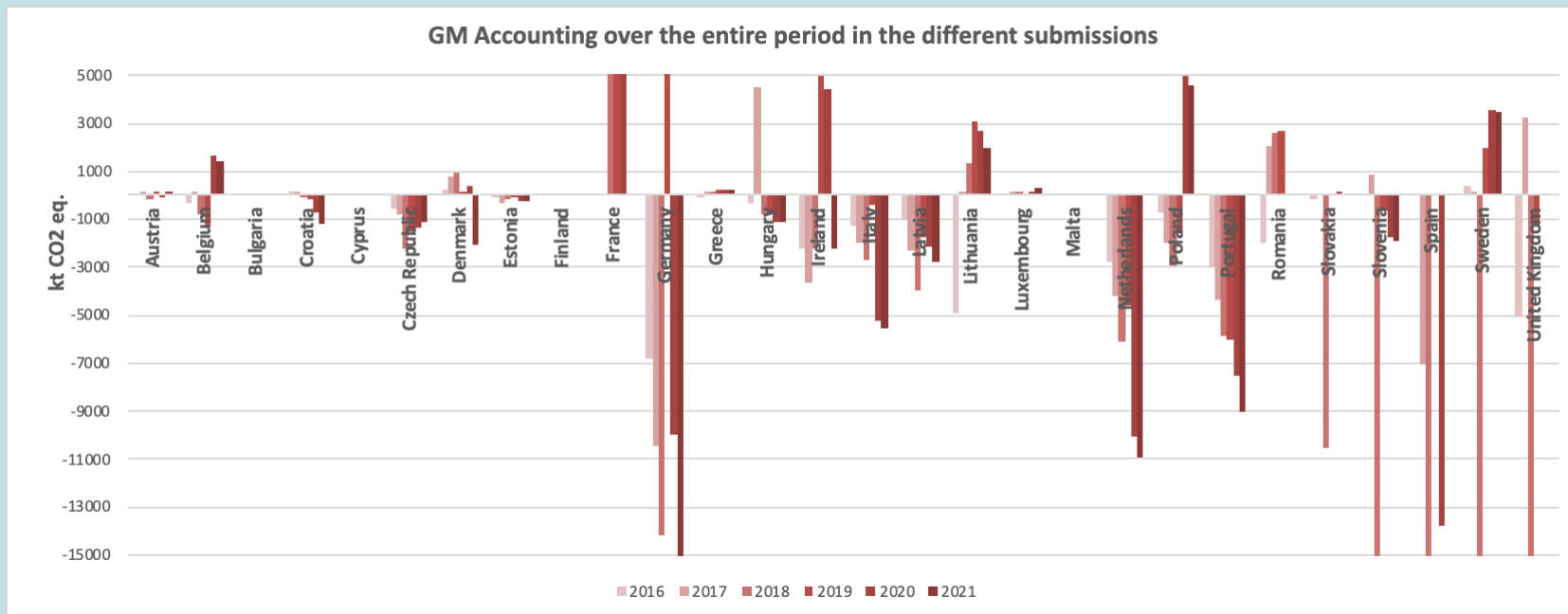


Accounting

CM Accounting over the entire period in the different submissions



Accounting



Conclusions

- ✓ Decreased completeness of submissions (no data for 5 MS)
- ✓ Similar completeness in the estimations in terms of C stocks
- ✓ It's confirmed a certain stability in the estimates compared to previous years, probably due to more robust and established methodologies.

Thank you for your attention