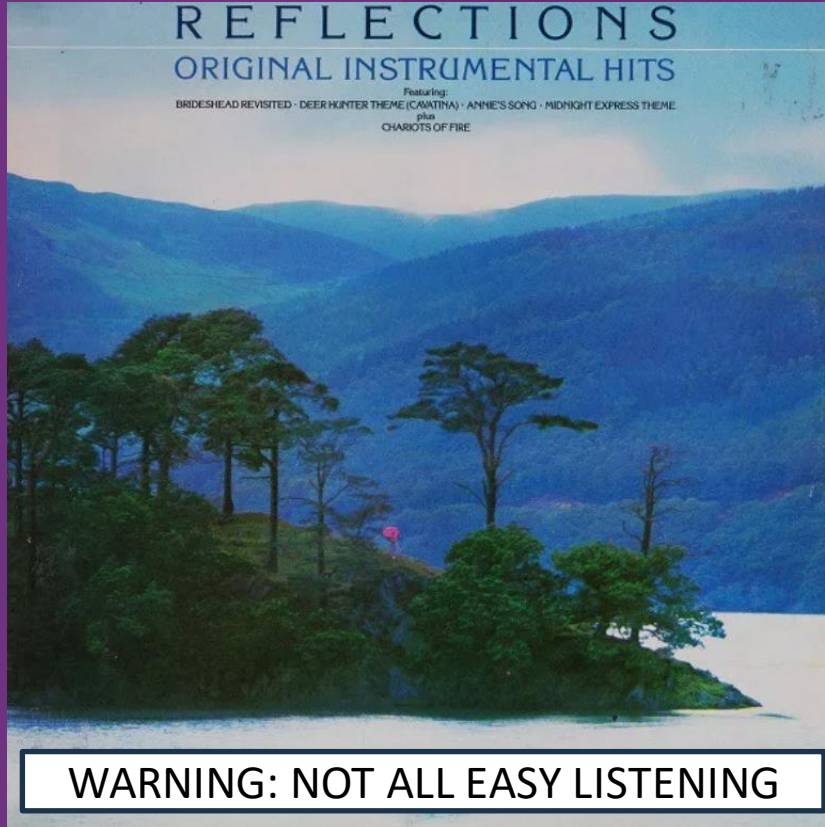


Reflections on FRL



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The views and opinions expressed in this presentation are the personal observations of the presenter and should not be taken to represent the opinions or positions of any government, administration, agency, institute or sector

- Why FRL accounting
- Principles
- Issues
- (Much of the above is an aide memoire)
- Insights (conclusions)

Have we reduced emissions? Compared to ...

- Last year
- A defined base year (e.g. 1990, 2005)
- What we would be emitted if we had not changed our actions
- What would be emitted if humans did not have any 'footprint'

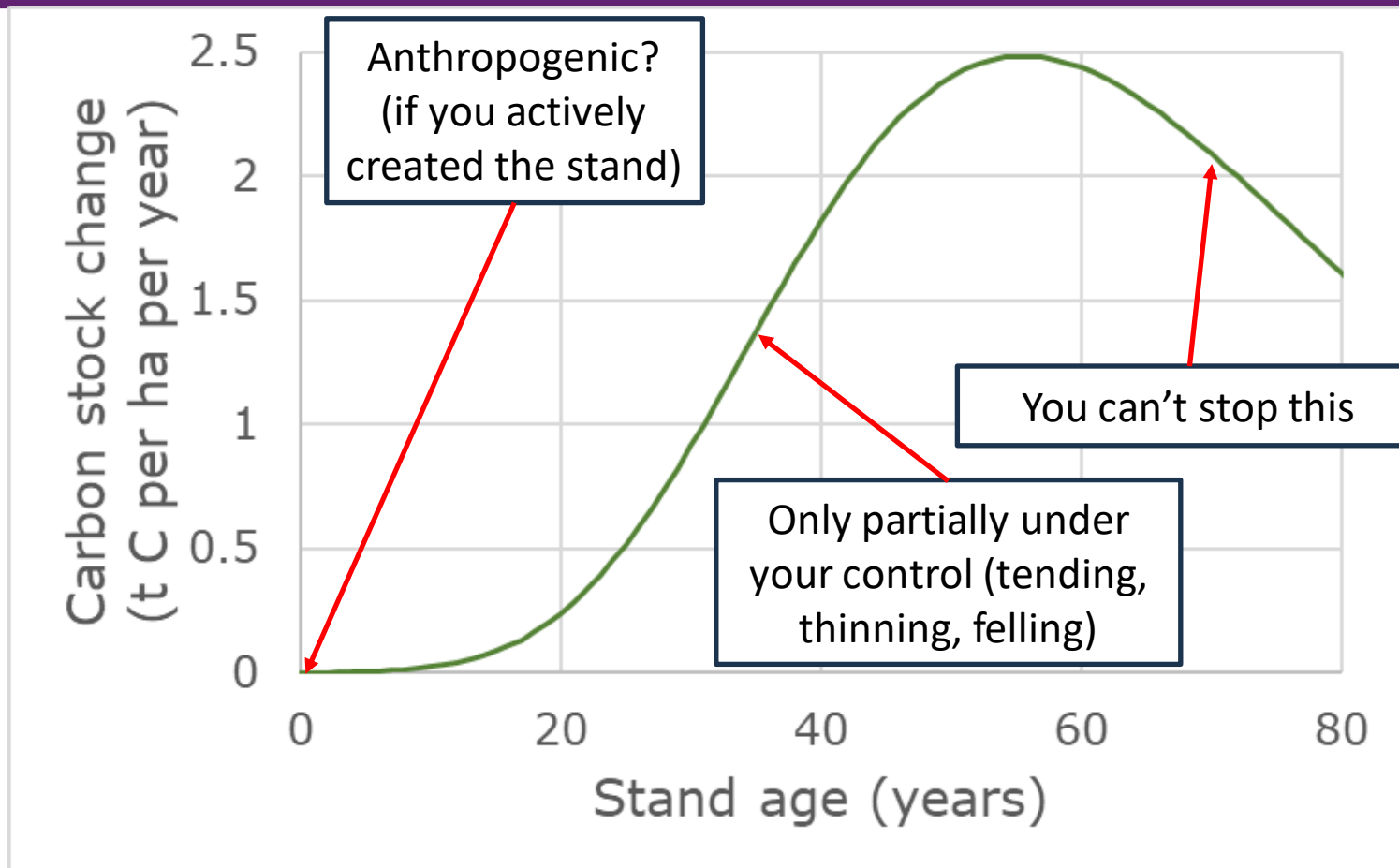
Have we reached net-zero emissions?

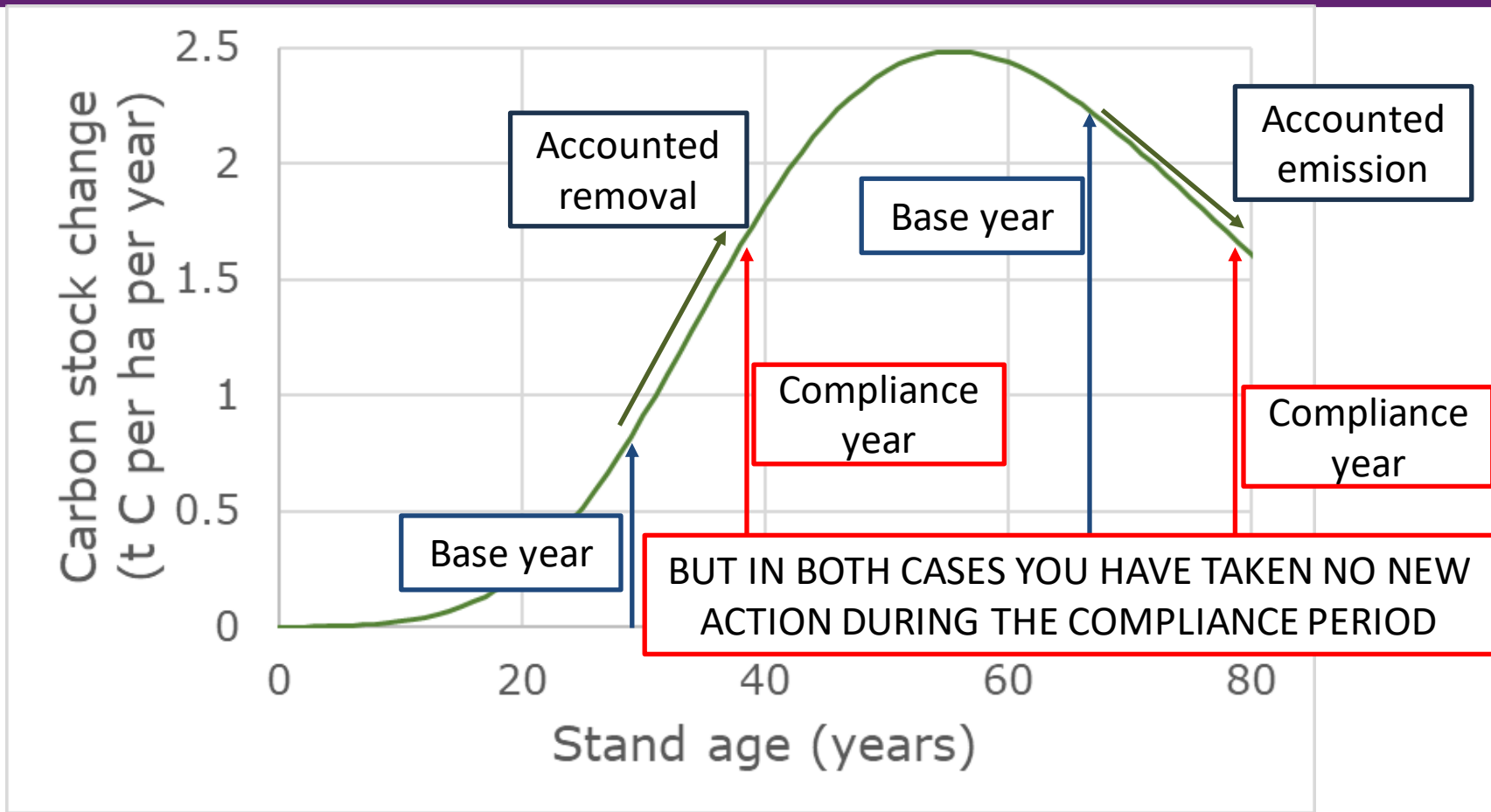
- All emissions and removals
- Anthropogenic emissions and removals
- CO₂ or all GHG emissions
- Also allowing for non-GHG effects ('climate neutrality')

Accounting for emissions from using oil (Obviously simplified...)

- "Base year"
- 1000 barrels consumed
- Emissions = 1000 x Emissions Factor
- "Compliance year"
- 800 barrels consumed
- Emissions = 800 x Emissions Factor
- Accounted emissions in Compliance year =
 $800 - 1000 = \underline{-200 \times \text{Emissions Factor (20\% reduction)}}$



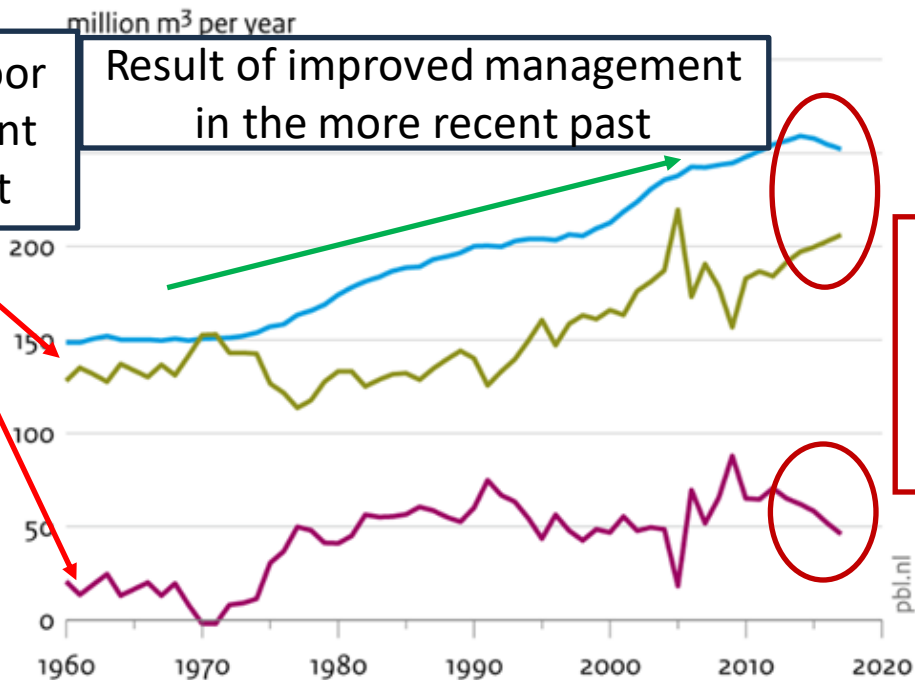




Annual stem volume changes in productive forests in Finland, Norway and Sweden

Result of poor management in the past

Result of improved management in the more recent past



- What effect are current (changed?) management activities having?
- How far can this go?

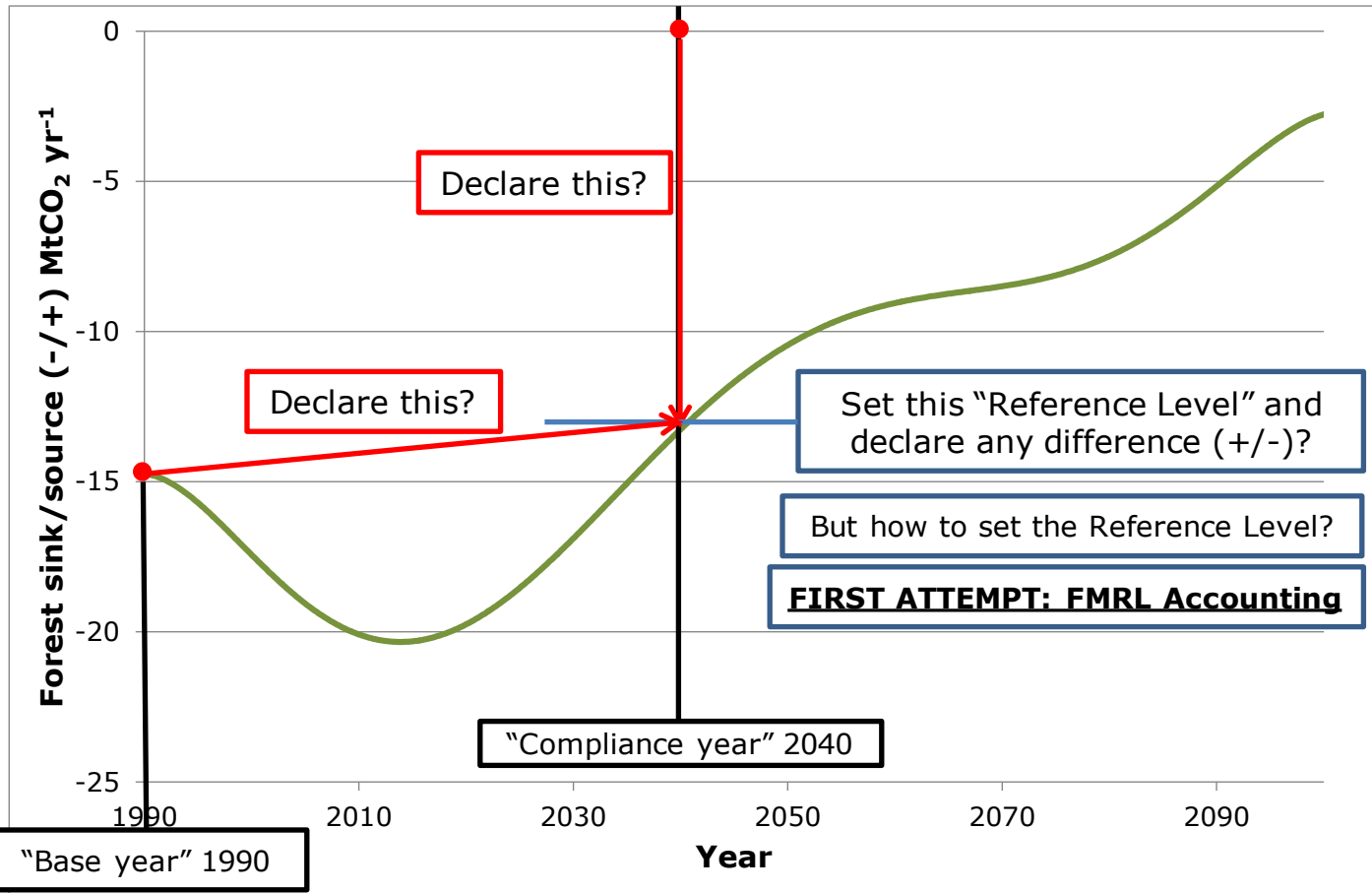
Source: Kauppi et al. 2022



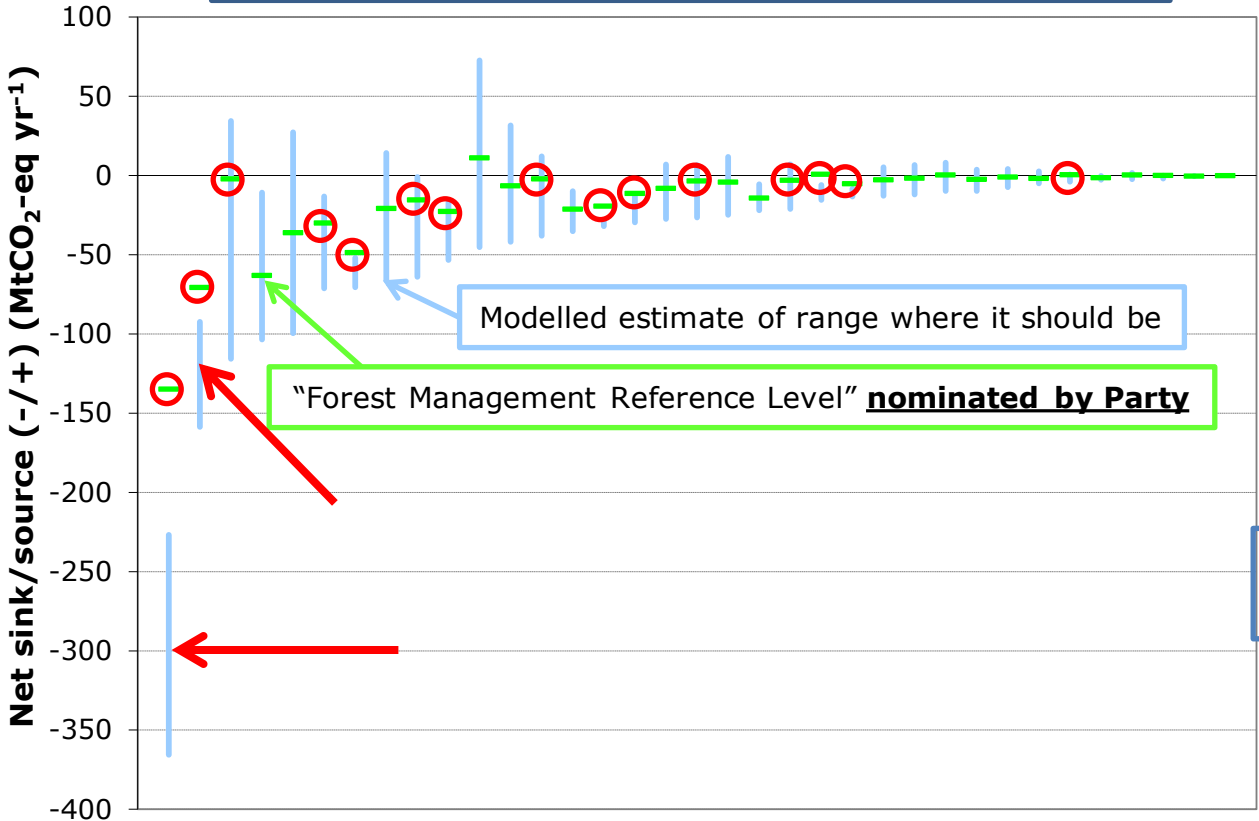
Bernhard Schlamadinger



Jim Penman, formerly UK DECC



Each bar represents a country ("Party") to the Kyoto Protocol



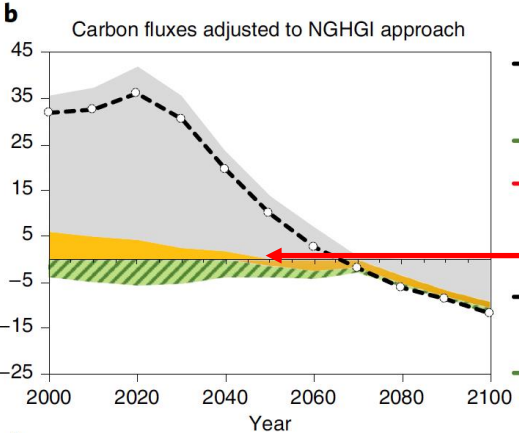
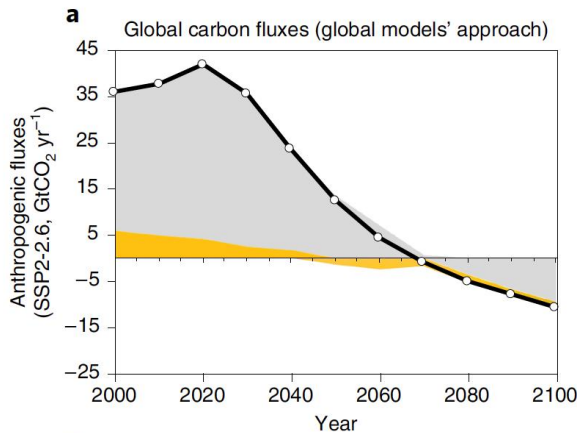
Jim Penman

Three modelling groups involved (two from EU project + Jim's)

- Allow for age-related effects in forest carbon stock changes
- Allow for continuation of existing management practices
- Work with UNFCCC inventories (reduced burden/effort)
- Ensure accounting for future changes in forest management practices (e.g. more forest conservation, mobilisation of wood resource)
- Changes in calculation methodologies ought to result in 'zero sum game' (change in reported emissions/removals would be 'tracked' by Technical Correction to FRL)
- Reduces likelihood of gaming...?

Before change	After change	Implications
Accounted removals	Accounted emissions	Something seems wrong? Needs careful checking
Accounted emissions	Accounted removals	
Accounted emissions	Bigger/smaller accounted emissions	Well, maybe, but best to check
Accounted removals	Bigger/smaller accounted removals	
'Small' change in magnitude (not direction)		Probably ok

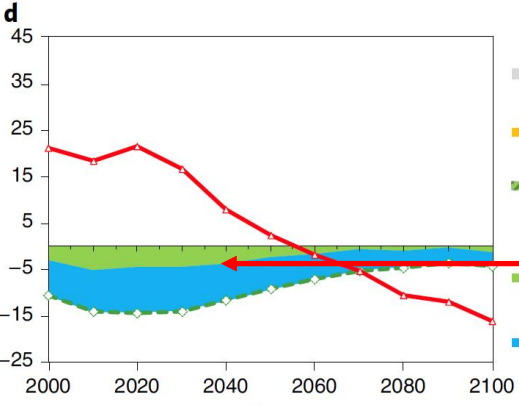
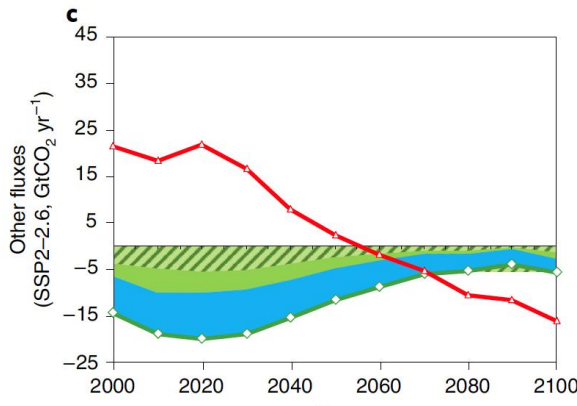
Can only do this at the end of the Compliance Period?



- Anthropogenic emissions (global models' approach)
- ◇— Natural sinks
- ◇— Increase of CO₂ in the atmosphere (anthropogenic emissions – natural sinks)
- Adjusted anthropogenic emissions (NGHGI comparable)
- ◇— Adjusted natural sinks

This is a very rough (mis)use of this figure

Don't include it and keep the existing target



- Fossil fuels and industry
- Land use
- Land sink due to indirect effects in non-intact forests
- Other land sink
- Ocean sink

Do include but the target is deeper

Source: Grassi et al. 2021

- **Needs** complicated Tier 3 modelling
- **Needs** a lot of activity data (incl. for historical Reference Period)
- **Needs technical expertise/capacity** – has this actually helped?
- **Under-plays** contribution of afforestation actions
- **Perceived as ‘constraining’** forest management (and bioeconomy development) – NO (strictly speaking), but emissions resulting from additional anthropogenic actions in forest land need to be accounted for – has highlighted the issue
- **May not adequately recognise** inherited problems with managing forest land?
Is this about “no surprises” and having contingencies?
- **Compliance could be at risk from** climate related disturbance – a question of timing?
Focus on restoration actions, deal with delay to meeting target?

Do/did we need FRL accounting?

- If you want to include the contribution of Forest Land to anthropogenic and additional emissions and removals – YES
- OR you need some other way of doing what FRL accounting is trying to do.

Can FRL accounting work?

BUT SEE FINAL BULLET

YES, BUT you need:

- Technical capacity, objectivity and honesty needed in Inventory Compilers
- Deep expertise and vigilance but also pragmatism needed in Expert Reviewers
- A commitment and a will from all sides to make it work

[These are true for all approaches but perhaps especially true for FRL accounting]

Is FRL accounting working?

- The jury is still out? – The final answer is up to us (you)
- Recall the goal – net zero anthropogenic emissions; how does FRL fit/work?

Reflections on FRL

Thank you