RSPO
Roundtable on Sustainable Palm Oil

Introduction to PalmGHG
The RSPO greenhouse gas calculator for oil palm products

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Transforming the market. Together.

Workstream 1

Measuring, monitoring & reporting operational GHG emissions

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PalmGHG

Palm products greenhouse gas accounting tool

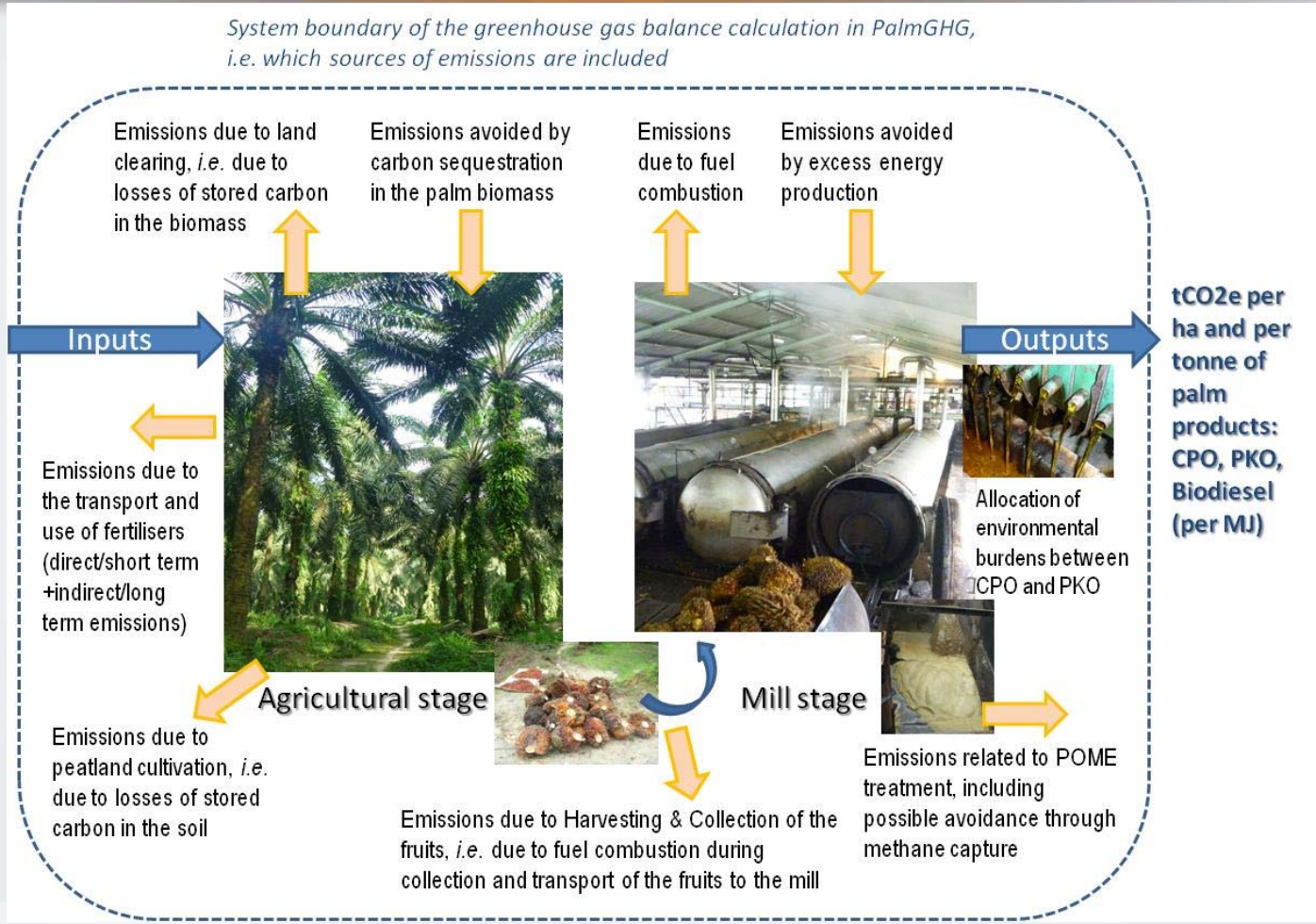
PalmGHG

A calculator that quantifies the major forms of GHG emissions and C sequestration from a mill and its supply base (estate and out-growers)

It is based on a harmonized framework that is compatible with international GHG accounting methodologies (IPCC, ISCC, etc.)

The content of the calculator and the features of the tool have been discussed within the whole GHG Working Group 2

System boundary



Important features

a) Flexibility:
   I. Adoption of different crop **rotation lengths** and possible **choice of oil palm growth data**
   II. It allows use of alternatives to the standard defaults
   III. It allows for the calculation of GHG for **CPO, PKO and bio-diesel** (to be compatible with the European Renewable Energy Directive requirements)
b) It caters for CO_2 emissions from **land use change and peat soils management**
c) It **allocates total net emissions between co-products**
d) It calculates annual net emissions per ha and per tonne of palm product; **may be updated yearly**
e) It allows for **scenario testing**

PalmGHG pilot

Presentation of the pilot testing

Objectives of the pilot

⇒ To allow growers to **experiment** with the tool: how can it be used and what can it be used for?

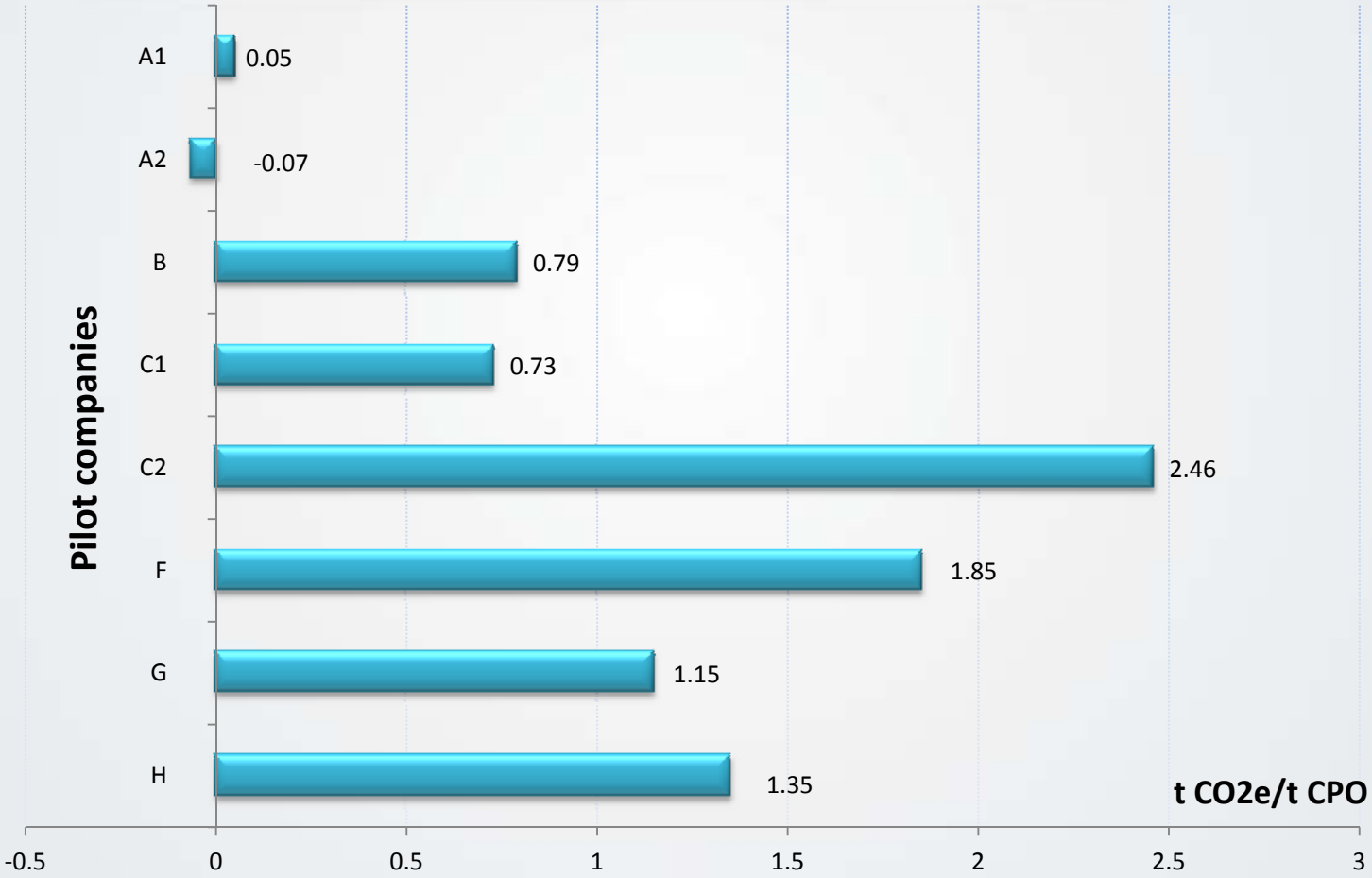
⇒ To test the **consistency** of the calculator: are all needed data available?

⇒ To gather **feedback from users to outline improvement** needs and development priorities

Overview of pilot results

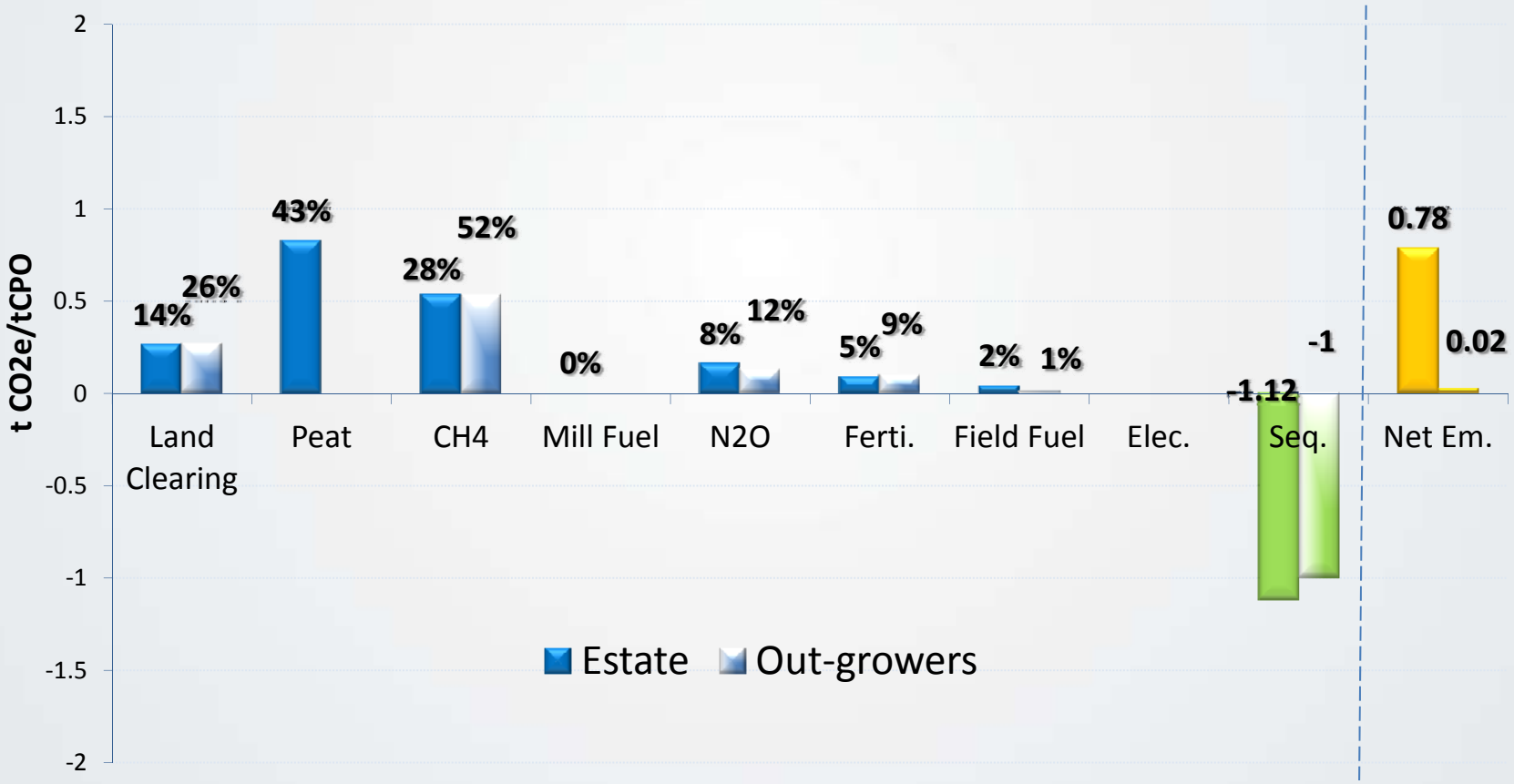
Mills	Mean tFFB/ha	Outgrowers included	Peat soils	Previous land use	tCO2e/tCPO
A1	23	no	no	shrub	0.05
A2	24	no	no	shrub	-0.07
B	26	no	no	cocoa, oil palm	0.79
C1	23	yes	25%	grassland, shrub	0.73
C2	19	yes	80%	grassland, shrub	2.46
F	19	no	no	logged forest, oil palm	1.85
G	26	yes	no	wide range from logged forest to arable crops	1.15
H	17	yes	no	logged forest	1.35

Net emissions for pilot mills

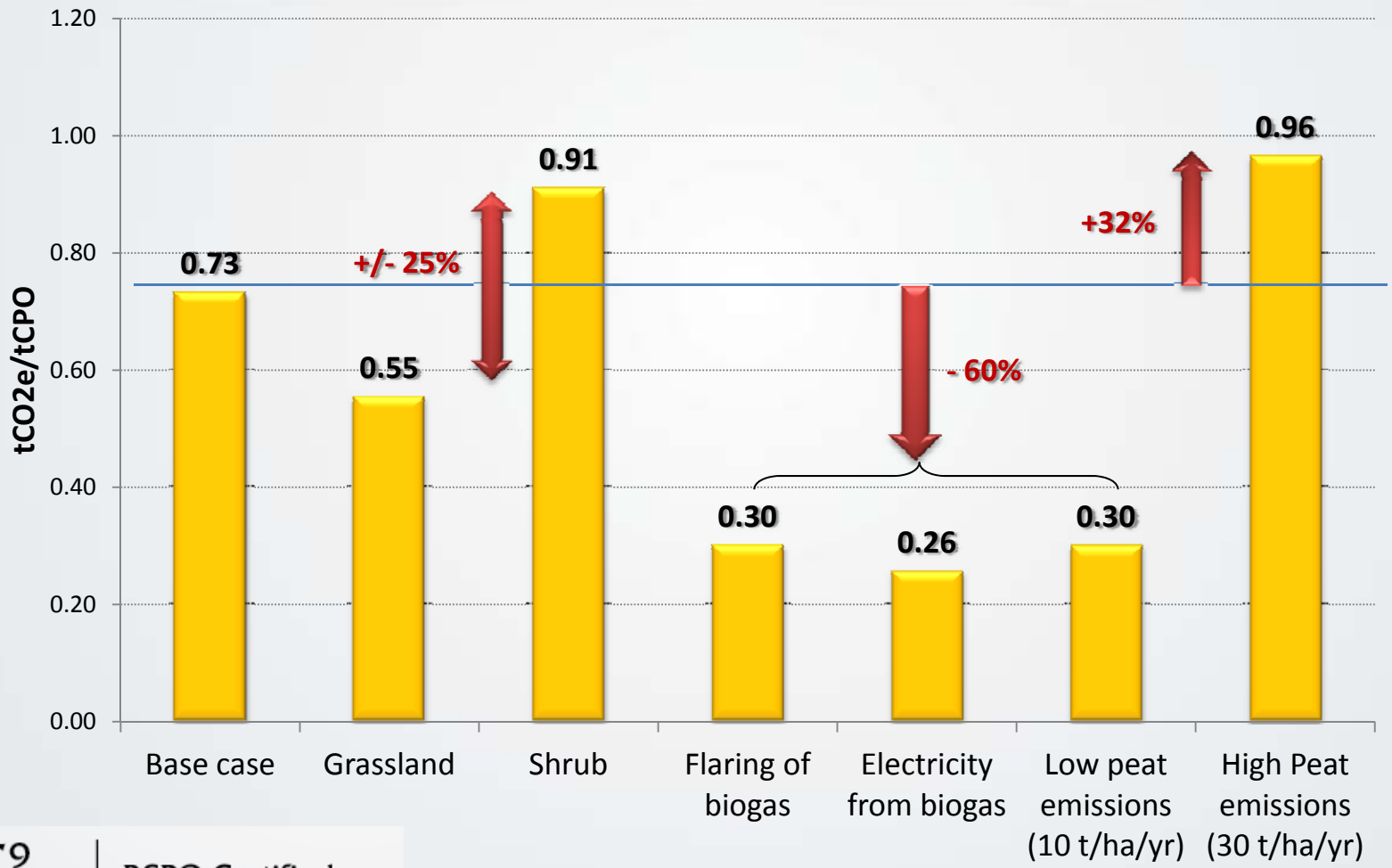


Pilot results:

Example of mill C1 base case

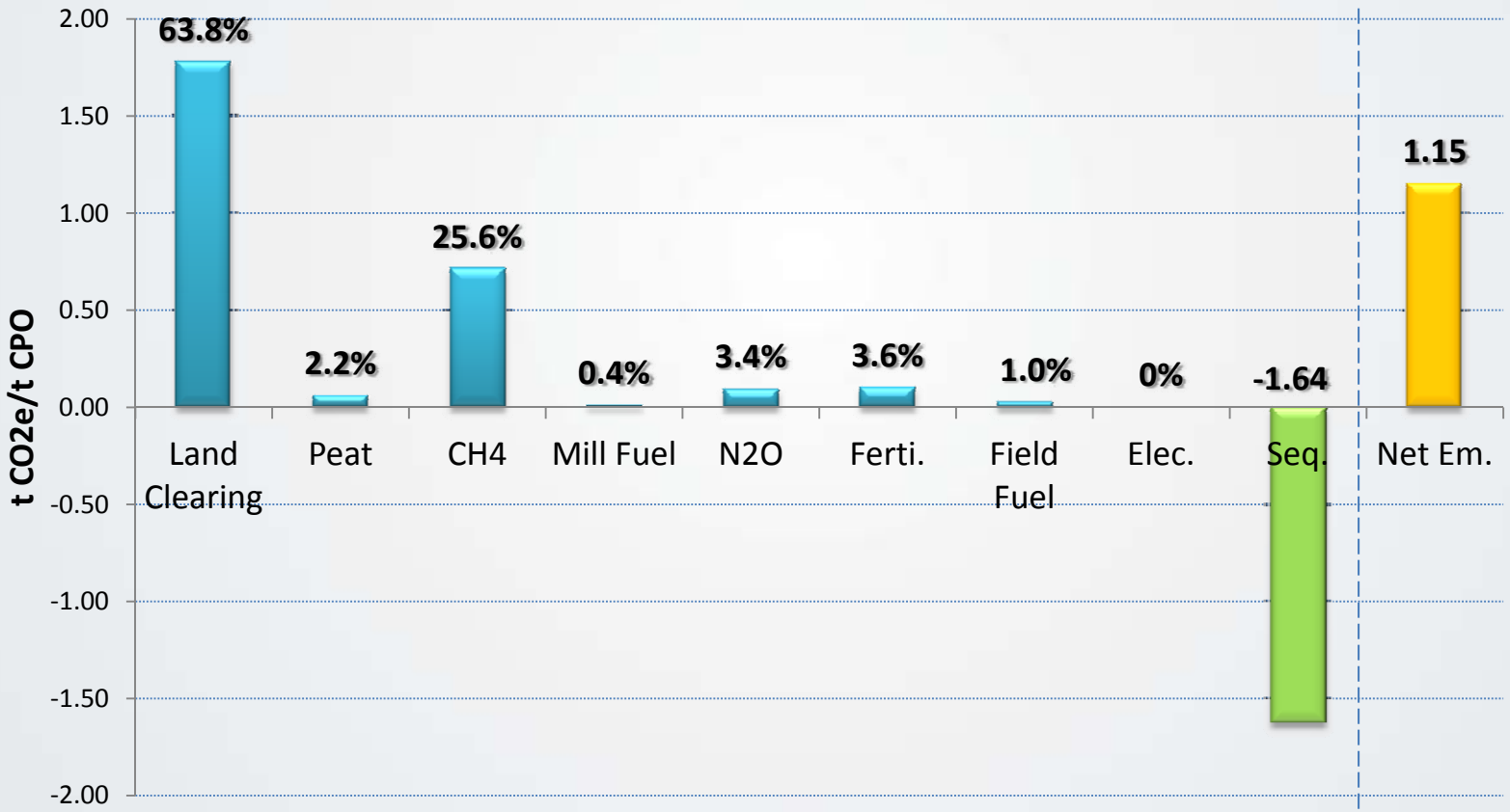


Pilot mill C1:
Combining estate & outgrowers



Pilot mill G:

Base case

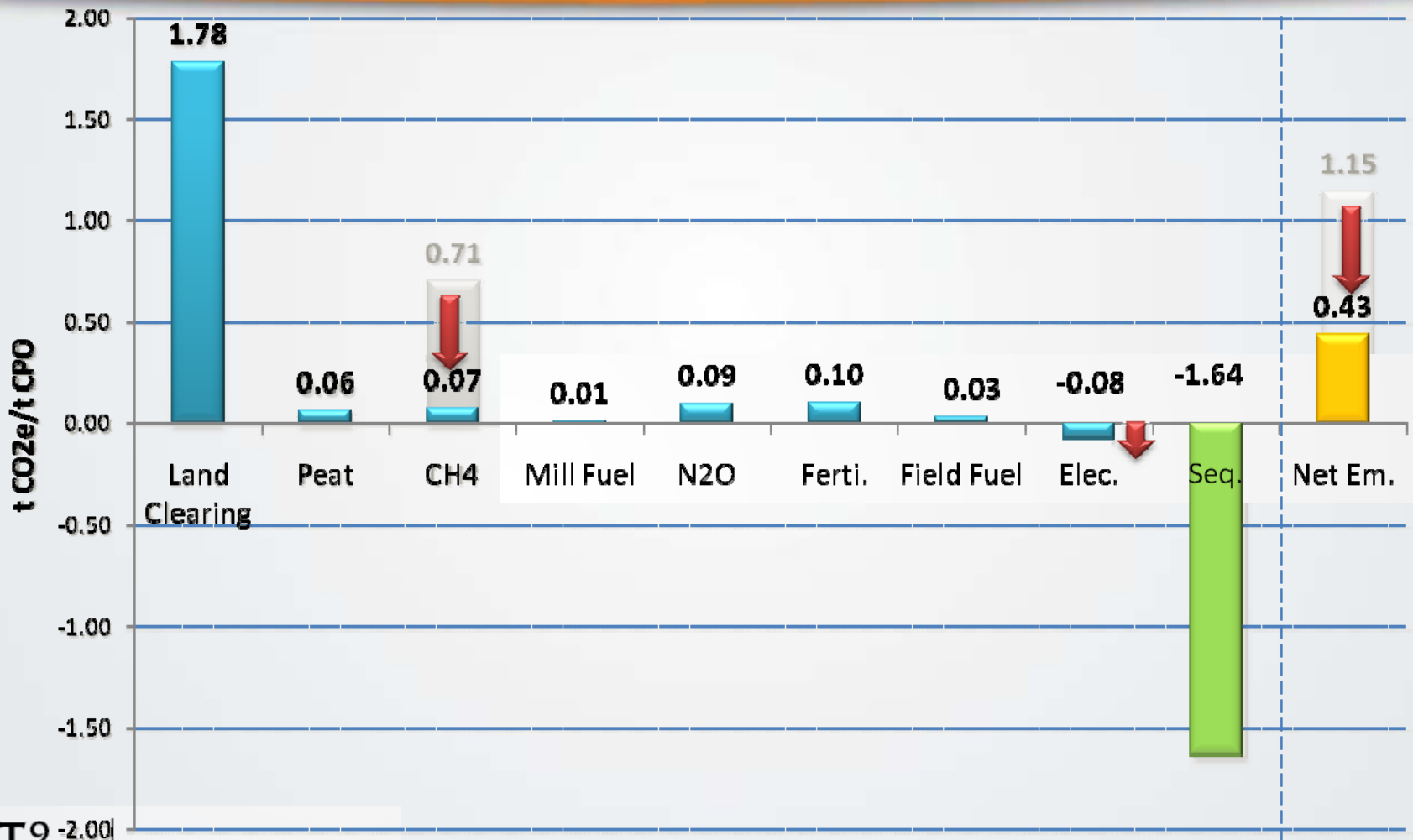


Pilot mill G:

Capture and flare methane

Pilot mill G:

Capture methane and convert into electricity

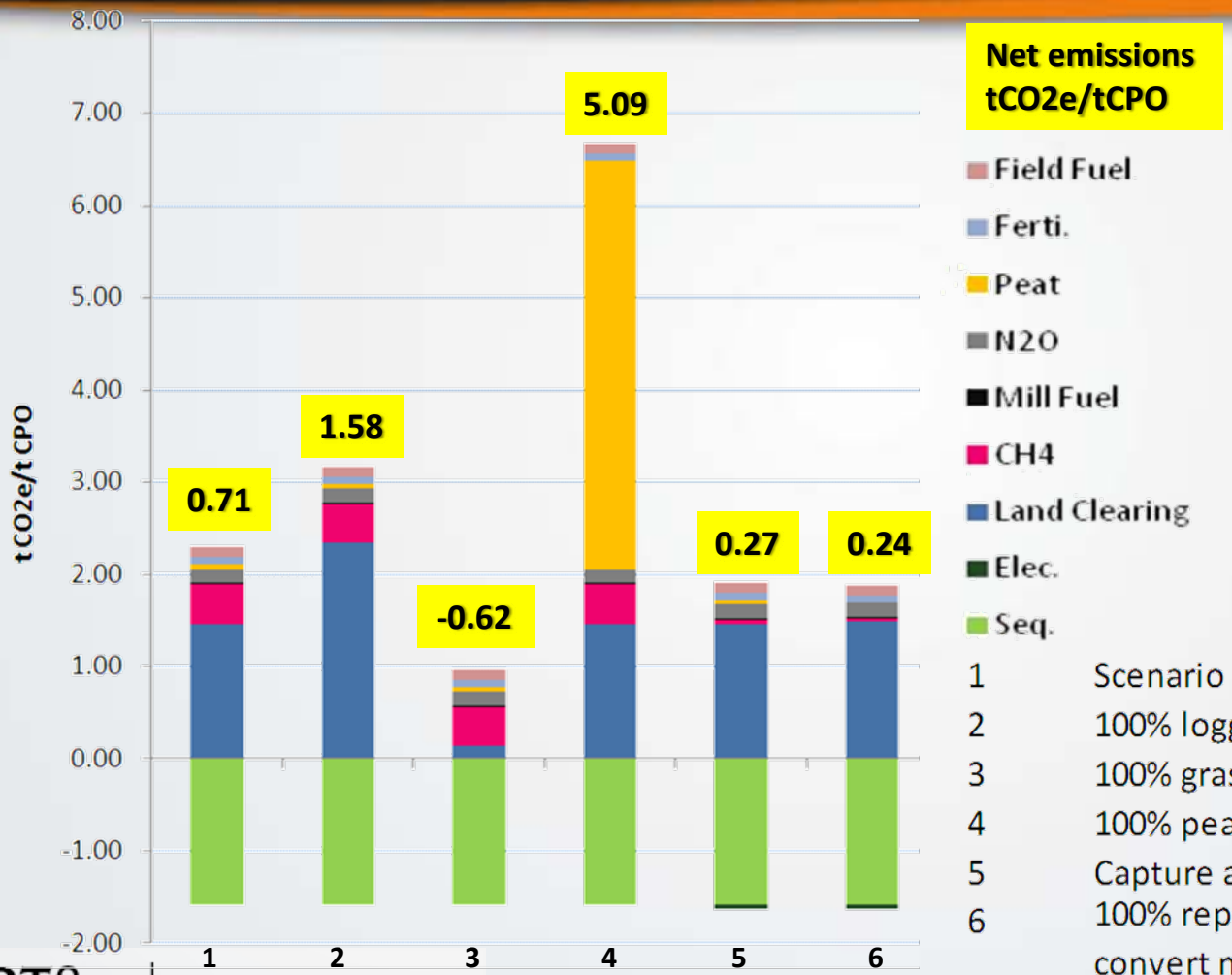


Pilot Mill G:

100% replant, capture CH4 and convert into electricity, reduced outgrower sequestration by 10%

Scenario testing

Base case 1: mixed previous land uses, peat 3%, no POME treatment, OER 20.8%, estate 20.2tFFB/ha, outgrowers 14.2tFFB/ha



1 Scenario base case
2 100% logged forest
3 100% grassland
4 100% peat
5 Capture and convert methane to electricity
6 100% replant, no peat, capture and convert methane to electricity

Scenario testing

Base case 1: mixed previous land uses, peat 3%, no POME treatment, OER 20.8%, estate 20.2tFFB/ha, outgrowers 14.2tFFB/ha

Net emissions tCO2e/tCPO

- Field Fuel
- Ferti.
- Peat
- N2O
- Mill Fuel
- CH4
- Land Clearing
- Elec.
- Seq.

1	Scenario base case
2	100% logged forest
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5	Capture and convert methane to electricity
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PalmGHG development

After Pilot Phase

- ⇒ Update C stock values and peat emission factors from WS3
- ⇒ Incorporate biofuel calculations for potential compliance with RED
- ⇒ Peer review of PalmGHG
- ⇒ Post-review development - user friendly, manual

Thank you