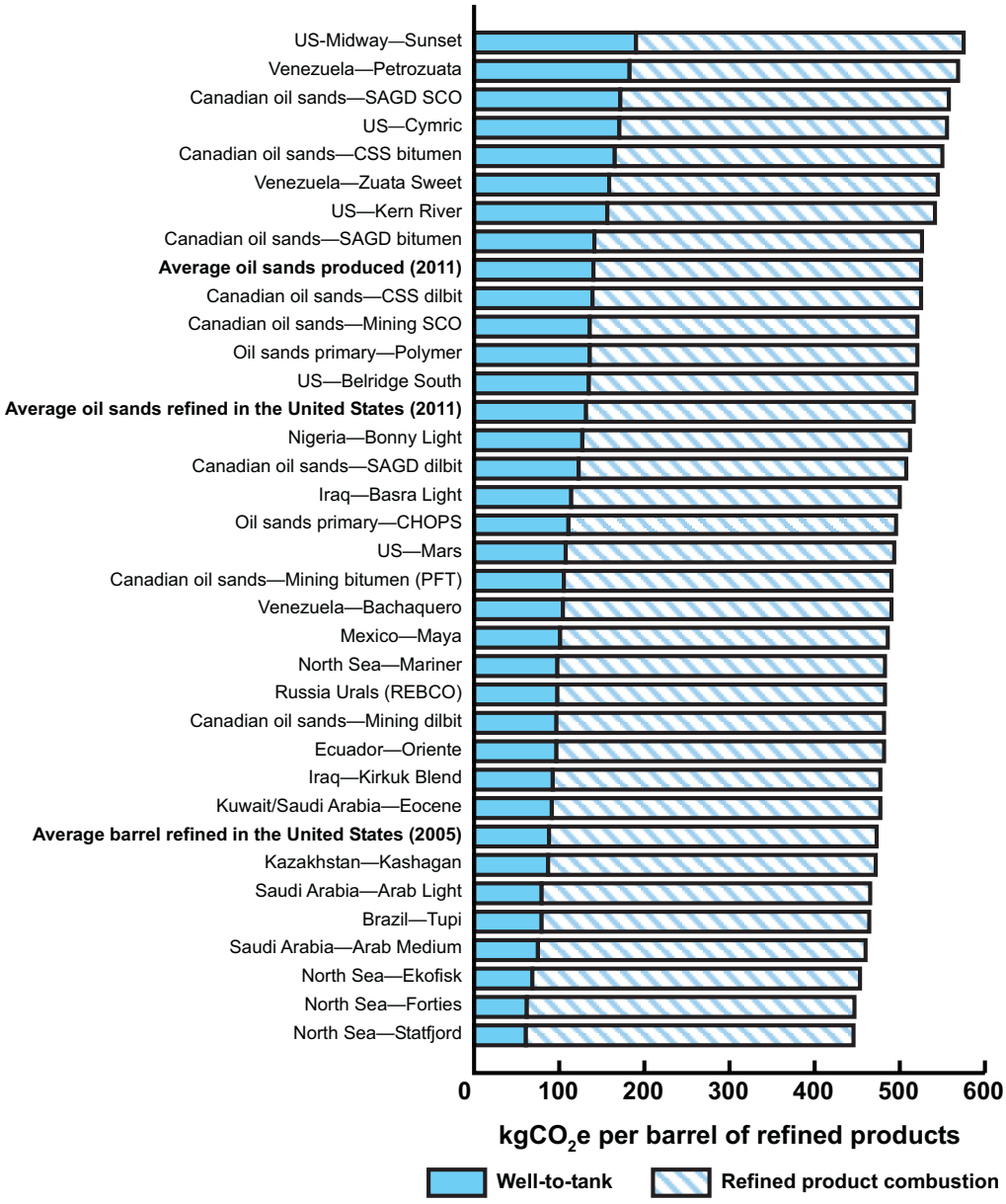
Figure 5

Well-to-wheels GHG emissions for oil sands and other crudes
(tight boundary)



Source: IHS CERA meta-analysis sourcing data from IHS CERA (2009), Environment Canada (2010), DOE/NETL(2008), Jacobs (2012), Jacobs (2009), Charpentier (2011), GHGenius (2011), GREET (2012), CARB-OPGEE (2012), Yeh (2010), EIA's past oil sands, and Alberta Environment.
Notes: Tight boundary includes direct emissions from the oil production site and facilities only.
Refining data sourced from Jacobs (2012).
Average oil sands refined in the United States (2011) assumes 7% SAGD SCO, 22% mining SCO, 20% CSS dilbit, 28.5% SAGD dilbit, 16% primary (CHOPS), 4% SAGD bitumen, and 3% CSS bitumen. "Average oil sands produced (2011)" assumes 50% mining SCO, 5% SAGD SCO, 15% SAGD bitumen, 17% CSS bitumen, and 13% primary (CHOPS). All dilbit blends are assumed 28% diluents; it is also assumed that the dilbit is consumed in the refinery with no recycle of diluents. All oil sands cases marked "bitumen" assume that diluent is recycled back to Alberta, and only the bitumen part of the barrel is processed at the refinery. For crude production using steam (California heavy crudes and oil sands in situ), impacts from cogeneration of electricity were not included in results.
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