From: Koepfgen, Pete
To: waterheaters@energystar.gov
Subject: Energy Star Water Heater Draft - Spec v.5 - comments

Is EnergyStar trying to reduce carbon emissions associated with end-use equipment or electrify? Renewable Gasses need equipment that are compatible. Re: supply of renewable gasses – the renewable gas industry hardly existed before, and now it needs to continue to grow, just like wind & solar has been growing. Encouragment from Energy Star would be helpful and seen as a good sign for it to grow. Encouraging fuel switching away from gas will discourage investment in RNG. RNG is a MUCH less expensive way to reduce carbon than relying on building new renewable power plants & electrical infrastructure upgrades to make it happen. It's hilariously practical. No equipment changes, no infrastructure changes, no risk on political parties canceling renewable generation plants. With RNG, all you have to do is order it online from your local gas utility.

The GHG emissions factors are better for RNG than our province's electricity from 98% hydrodams, because even w/ all of that hydro, they still use non-renewable sources (non-renewable energy imports) to serve new (incremental) load. See for yourself, from provincial gov't sources:

Source	kgCO2e/GJ (or g CO2e/MJ)	kgCO2e/kWh	tCO2e/GWh (or gCO2e/kWh)	% higher GHG/Energy unit than RNG
RNG - 2020-BC Best Practice to Quantify GHG Emissions (pg 13)	**0.2932**	0.001056	1.06	0%
Elec - B.C. Best Practices Methodology for Quantifying Greenhouse Gas Emissions 2020	2.96	0.011	**10.67**	911%
Elec - 2020 GGIRCA website (integrated grid)	11.14	0.040	**40.10**	3699%
Elec - 2019 GGIRCA website (integrated grid)	8.31	0.030	**29.90**	2733%
Elec - 2018 GGIRCA website (integrated grid)	7.03	0.025	**25.30**	2297%

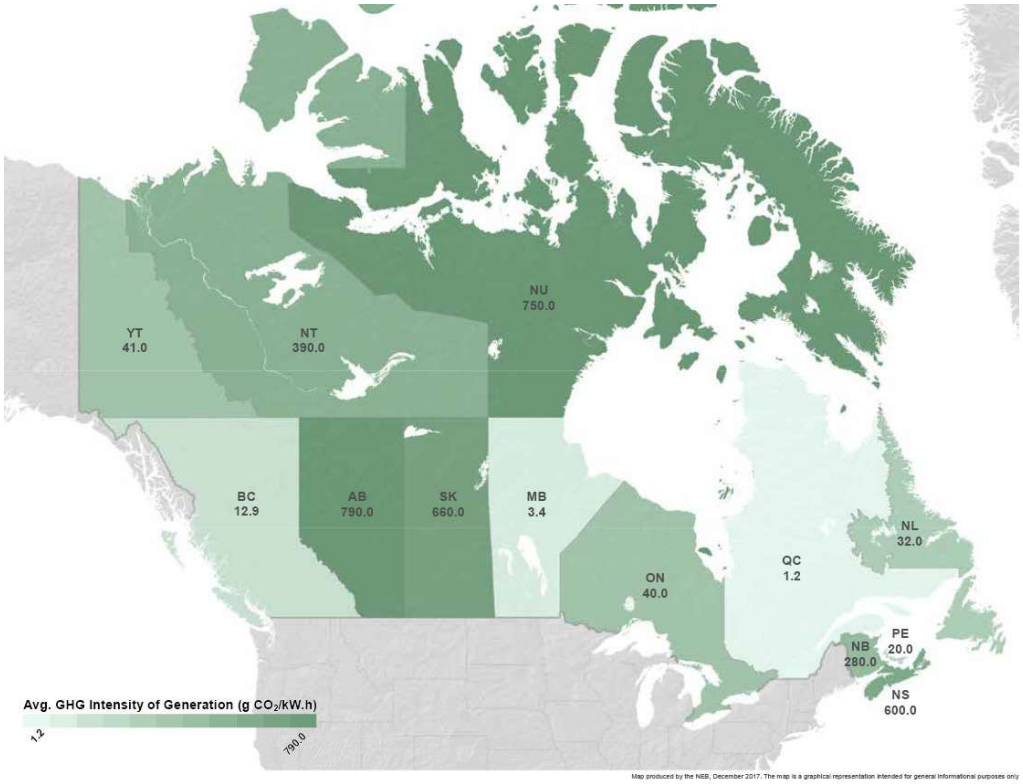
If you discourage gas tank water heaters by choosing a UEF that is too high, you are signaling the market that Renewable Gasses shouldn't be pursued in this market. Back to my original question, are you trying to reduce carbon emissions or electrifying?

FortisBC recommends choosing a gas tank type water heater UEF that is achievable to the same market share degree as the specs chosen for electric water heaters, plus investigate an ecolabel for renewable gasses. In addition to Renewable Natural Gas, we are creating a hydrogen standards update roadmap in a couple weeks, as part of the Canadian Standards Association, if someone wants to attend, let me know. We will likely base it on what's already been done in the UK.

Sources:

https://www2.gov.bc.ca/gov/content/environment/climate-change/industry/reporting/quantify/electricity
2020 B.C. BEST PRACTICES METHODOLOGY FOR QUANTIFYING GREENHOUSE GAS EMISSIONS FOR PUBLIC SECTOR ORGANIZATIONS, LOCAL GOVERNMENTS AND COMMUNITY EMISSIONS (attached)

Even compared to conventional Natural Gas (180 gCO2e/kwh; in the map below) using average emissions (not even marginal), emissions would get worse in 6 out of 13 provinces & territories switching to electricity. Why not encourage lower carbon gasses?



Pete Koepfgen, MSc. P.Eng (BC+Ont)
Energy Utilization Manager, Energy Products & Services | FortisBC Inc.
604-314-7165 | pete.koepfgen@fortisbc.com

FORTIS BC
Energy at work

Visit us at fortisbc.com. We're growing our Renewable Gas Supply, check it out here.