Documentation for FiTABM

Phoebe Pearce

31 March 2017

This document aims to give an overview of the ways in which the key functions in the model can be used (i.e. what their arguments are and what they can do).

Historical simulations

load_data()

Usage:

load_data(start_date, end_date, FiT_end_date, FiT_type, red_frac, init_fit, final_fit, exp_tar, dep_caps, cap)

Required arguments:

None

Default arguments:

- start_date = "1apr2010"
- end_date = "1sep2016"
- FiT_end_date = end_date
- FiT_type = "real_h"
- red_frac = 0.03
- init_fit = 49.43
- final_fit = 4.18
- exp_tar = 4
- dep_caps = F
- cap = no default

Arguments:

- *start_date* is when the simulation starts. Passed as a string (NOT a date), in the format "1jan2000"
- *end_date* is when the simulation ends. Passed as a string (NOT a date), in the format "1jan2000"
- *FiT_end_date* is when the feed-in tariffs end (so no new registrations, but existing installations keep receiving their FiTs). Passed as a string (NOT a date), in the format "1jan2000"
- *FiT_type* is the degression strategy. This can have the following values:
  - "real_h" - sets the FiTs as they actually were in Great Britain 2010-2016 for < 10kW solar systems.
  - "perc_red" - the generation tariff reduces by a fixed % every month from some starting value (export tariff fixed)
  - "ann_perc_red" - the generation tariff reduces by a fixed % every year from some starting value (export tariff fixed)
  - "linear" - the generation tariff reduces linearly every month between an initial and final value (export tariff fixed)

If you are setting "real_h", you don't need to set anything else, it happens automatically. Has to be passed as a string (so "real_h", not real_h)

- *red_frac* is the fractional (not percentage!) reduction for FiT types "perc_red" and "ann_perc_red". Don't set for the other FiT types.
- *init_fit* is the initial generation tariff (needed for all FiT types except "real_h") in p/kWh

- *final_fit* is the final generation tariff (only need for FiT type "linear") in p/kWh
- *exp_tar* is the export tariff in p/kWh. Needed for all FiT types except "real_h" and assumed to be constant.
- *dep_caps* is a Boolean (TRUE (T) or FALSE (F)). Set to true if you want there to be deployment caps.
- *cap* is how much you want the deployment cap to be per quarter in MW. Only set if you're using dep_caps = T.

batch_run_func()

Usage:

batch_run_func(w, t, number_of_agents, number_of_runs, plot_u, plot_cost, plot_prod, save_name)

Required arguments:

None

Default arguments:

- w = c(0.27, 0.25, 0.05, 0.43)
- t = 0.74
- number_of_agents = 5000
- number_of_runs = 10
- plot_u = T
- plot_cost = T
- plot_prod = T
- save_name = no default

Arguments:

- *w* are the partial utility weights, in the order income, social, economical, capital cost. The defaults are the results of calibration.
- *t* is the adoption threshold, again the result of calibration.
- *number_of_agents* is how many agents the model generates and uses for each model run.
- *number_of_runs* is how many times the model is repeated to produce an average results.
- *plot_u*, *plot_cost*, and *plot_prod* accept TRUE or FALSE. They don't affect how the model runs, but do (T) or don't (F) plot the partial utilities, private and subsidy cost, and production over time.
- *save_name* is how you want any saved results to be identified. If you don't enter anything, your results won't automatically be saved (but they will still be in the workspace after the model is finished running).