UNESCO/IHA research project on the

GHG status of freshwater reservoirs

The GHG Reservoir Tool (G-res)

Version updates

iha
international hydropower association

United Nations
Educational, Scientific and
Cultural Organization

UNESCO Chair in
Global environmental
change

In cooperation with:

With financial support from:

Version 1.1

(2017-10-18 10:00 AM EDT)

Phosphorus concentration calculation issues solved.
Minors calculation issues solved.

Version 1.12

(2018-02-06 8:00 AM EDT)

Phosphorus concentration calculation issues solved.
Thermocline depth calculation issues solved.
Drained peatland empty cell added
Visual updates for more clarity

Version 1.13

(2018-10-25 12:00 PM EDT)

Default Wastewater treatment: None for least developed country and Secondary for developed country (UNDESA 2018)
Automatic Annual wind speed correction calculation using Wind measurements height (m)
New email confirmation system
Now including Power density and Allocated GHG emission intensity in the GHG results PDF report
Now suggesting to provide Full water supply level reservoir area (km^2) instead of Mean reservoir area (km^2) to obtain more conservative emissions
G-res Tool - Terms and conditions for Use

Version 1.14

(2019-04-01 9:00 PM EDT)

Mean depth calculation issues solved
G-res Tool - Terms and conditions for Use Update

Version 2.0

(2019-05-09 9:00 AM EDT)

New CO_2 model calculation (To include a new and more precise Soil Carbon Content layer available)
Emissions Results 95% Confidence Intervals
Histogram to present the Emissions results
New design
% for Land Use Intensity
Possibility to add directly Release of phosphorus from community sewage
Update of the Earth Engine functionality

Version 2.1

(2019-08-21 9:00 AM EDT and 2019-09-10 4:00 PM EDT)

CH4 EF from water bodies calculation issues solved. (2019-08-20)
95% Confidence Intervals calculation issues solved. (2019-08-10)
Construction Equipment Power Connection emission calculation issues solved. (2019-08-10)

Version 3.0

(2021-10-27 9:00 AM EDT)

Update to the 4 pathways models
Visual updates to the layout for more clarity and better user interface.
Now including depth and discharge for secondary intakes
Provide the choice to include or not UAS emissions
Minor revisions to inputs variables calculation.

Version 3.1

(2022-01-12 9:00 PM EDT)

Update to Pre-Impoundment CO2 emission factor conversion.
Minor technical issues solved.

Version 3.11

(2022-06-27 2:30 PM EDT)

Minor technical issues solved for:
- WRT calculation when secondary intake discharge
- Effective temperature coefficient of CO2 diffusive modified
- CO2 pre-impoundment organic wetland EF was not included and is now

Version 3.2

(2022-12-19 2:00 PM EDT)

-New tab including temporal evolution of emissions through time
-Update to the Earth Engine functionality to improve user experience, change in drawing order, include river length measurement tool and new 2020 population layer
-Menu reorganization