# Currently Known Bugs

## Breakdown by Shiny Output

Highlighted are errors which are high priority, as they are a common error.

~~Strikethrough text are errors which have been fixed.~~

### Graph View

Graph View and Table View errors often likely go hand in hand as they’re based on the same data frame (just that Table View requires some restructuring for it to work).

* *LULUCF 🡪 4.B Cropland 🡪 4.B.2 Land Converted to Cropland*Any immediate sub-section from this point yields the same results (the codes are identical thus my code is unable to differentiate between the two which results in the doubling up of results).  
  Sub-sections that go beyond this layer work fine.
* *~~Energy 🡪 1.A Fuel Combustion – Sectoral Approach 🡪 1.A.4 Other Sectors 🡪 1.A.4.c Agriculture/Forestry/Fishing 🡪 1.A.4.c.i Stationary~~*~~Excessive subsections included in this layer, as my code was unable to differentiate between~~ *~~1.A.4.c.i Stationary~~* ~~and~~ *~~1.A.4.c.ii Off-road vehicles and other machinery~~* ~~and~~ *~~1.A.4.c.iii Fishing~~* ~~This error is because I only search by the exact code only when there are~~ **~~duplicates~~** ~~within the data frame. As these final category names aren’t duplicated, I don’t search by the exact code and hence the source of error.   
  Perhaps can switch from searching by exact when there are duplicates to when we’re at the lowest layer.~~
* *~~LULUCF 🡪 4.B Cropland 🡪 4.B.1 Cropland Remaining Cropland 🡪 Carbon stock change~~*~~Filtering by~~ *~~Total CO2~~* ~~completely changes the main graph when there shouldn’t be any change (as~~ *~~Total CO2~~* ~~is the only GHG present).~~
* LULUCF 🡪 4.C Grassland 🡪 4.C.1 Grassland Remaining Grassland  
  All sub-sections below this level run into a similar problem as 4.B.2 Land Converted to Cropland and its sub-sections, where the code can’t differentiate between the two sections and ends up combining them all into one frame.
* LULUCF 🡪 4.C Grassland 🡪 4.C.2 Land Converted to Grassland  
  Similar problem to above, but this time it’s even more cursed.
* LULUCF 🡪 4.D Wetlands 🡪 4.D.1 Wetlands Remaining Wetlands 🡪 Carbon stock change 🡪 4.D.1.3 Other Wetlands Remaining Other Wetlands  
  Graph switches around the ordering of the two sub-sectors (values remain the same).
* ~~LULUCF 🡪 4.D Wetlands 🡪 4.D.2 Land Converted to Wetlands 🡪 Carbon stock change  
  Entering this section crashes the Shiny app entirely (Console gives a Warning: Error in [[: subscript out of bounds error for line 255).~~
* LULUCF 🡪 4.E Settlements 🡪 4.E.2 Land Converted to Settlements   
  Missing an entire sub-section from the plot (which isn’t even the lowest layer)
* ~~LULUCF 🡪 4.E Settlements 🡪 4.E.2 Land Converted to Settlements 🡪 Carbon stock change 🡪 4.E.2.5 Other Land Converted to Settlements 🡪 Other land converted to settlements  
  Entering this section crashes the Shiny app entirely (Console gives a Warning: Error in [[: subscript out~~ *~~of bounds error~~* ~~for line 255).~~
* *~~LULUCF 🡪 4.A Forest Land 🡪 Forest Land Remaining Forest Land/ 🡪 Land Converted to Forest Land~~*~~Exact same error as above.~~
* *~~LULUCF 🡪 4.G Harvested Wood Products 🡪 Approach B~~*~~Exact same error as above.~~
* Certain breakdowns which have multiple layers of not including code in *Name on tab* which breaks how my code determines the sub-sections.

### Table View

* *~~Change from `Year to Compare` to `Selected Year`~~* ~~doesn’t fully work when the~~ *~~`Year to Compare`~~* ~~value is missing (this is more common for earlier years).   
  This results in~~ *~~Change from – to –~~* ~~values to be equal to an essentially random percentage rather than N/A (as it is on the current tracker)~~
* ~~Order of rows in~~ *~~Comparison~~* ~~data frame different when compared to the~~ *~~df\_output­~~* ~~data frame.   
  This leads to incorrect~~ *~~Change from – to –~~* ~~percentage values (most common in final layer).~~
* *~~Energy 🡪 1.B Fugitive Emissions from Fuels 🡪 1.B.2 Oil and Natural Gas and Other Emissions from Energy Production~~*  ~~Any immediate sub-section from this point breaks~~ *~~Change from – to –~~* ~~when applying a GHG filter.~~
* *~~Industrial Processes and Product Use 🡪 2.C Metal Industry~~*~~From here, changing the year to pre-2000 gives us the additional sector of~~ *~~2.C.4 Magnesium Production~~* ~~which we can enter.   
  However, after doing so and going back to~~ *~~2.C Metal Industry~~* ~~layer, we are unable to change the year back to post-2000 (where~~ *~~2.C.4 Magnesium +Production~~* ~~doesn’t exist), as it results in an error.   
  Only way to fix is to go back to~~ *~~Industrial Processes and Product Use~~* ~~and change the Year back to post-2000 then, then go back down.~~
* ~~Sometimes filtering by just a single GHG will cause the~~ *~~Change from – to – ­~~*~~to go from the correct percentage into~~ *~~Inf%~~*~~.~~
* *~~Tokelau~~* ~~Numbers seem a bit off for~~ *~~Change from – to –~~*~~, specifically~~ *~~6. Tokelau\_2. Industrial Processes and Product Use~~*

### Year Graph

* *~~Energy 🡪 1.A Fuel Combustion – Sectoral Approach 🡪 1.A.3 Transport 🡪 1.A.3.b Road Transportation 🡪 Cars~~*~~Plot has values before 2001 which shouldn’t exist.  
  This is because from 1990 to 2000, all road transportation was aggregated together and stored in~~ *~~1.A.3.b.i~~* ~~(where Cars is post 2000).   
  As such, the time series summary on the first sheet has~~ *~~All vehicle types~~* ~~for years 1990-2000 and then~~ *~~Cars~~* ~~specifically for years 2001-2018~~
* *~~Industrial Processes and Product Use 🡪 2.D Non-energy Products from Fuels and Solvent Use 🡪 2.D.3 Other (please specify) 🡪 Other (please specify)~~*~~Plot should be the same as~~ *~~2.D.3 Other (please specify)~~* ~~but is different (entries before 2008)~~
* *~~Industrial Processes and Product Use 🡪 2.F Product Uses as Substitutes for ODS~~*~~Filtering by GHG results in Year plot to break for~~ *~~2.F Product Uses as Substitutes for ODS~~* ~~and all its sub-sections (~~*~~Error: Aesthetics must be either length 1 or the same as the data (27): fill)~~* ~~Double check whether this error is one that occurs for all sub-sections with only one real GHG to filter by, or whether this is only in this one case.   
  Looks like the error isn’t~~ *~~2.F~~* ~~specific, but also doesn’t occur for every single instance where only one GHG bar is present.  
    
  This error is because when manually extracting the time series data from~~ *~~emissions~~*~~, the years which have 0 values were culled during the ‘cleaning’ process (done in~~ *~~cleanSheet()~~* ~~function). This results in our time\_sector data frame to have a time series that doesn’t include certain years, making the length less than that of Year\_Selector$toHighlight (which always assumes all years from 1990 to 2018 is present).~~
* *~~Agriculture 🡪 3.A Livestock 🡪 3.A.1 Enteric Fermentation 🡪 3.A.1.1 Cattle 🡪 Option A~~*~~Year graph is meant to be same as~~ *~~3.A.1.1 Cattle,~~* ~~but changes (and is wrong).   
    
  This problem is also present for~~ *~~3.A.1.2 Sheep~~* ~~and~~ *~~3.A.1.3 Swine.~~*~~This is likely due to~~ *~~3.A.2 Manure Management 🡪 3.A.2.1 CH4 Emissions 🡪 3.A.2.1.1 Cattle 🡪 Option A~~* ~~also being present, and so somehow the code is picking up the time series for this as opposed to what it should.~~
* *~~Agriculture 🡪 3.A Livestock 🡪 3.A.2 Manure Management 🡪 3.A.2.1 CH4 Emissions 🡪 3.A.2.1.2 Sheep 🡪 Others (please specify)~~*~~Same issue as above, where going down to this level changes the Year plot even though it shouldn’t have an effect.  
  Also applicable for~~ *~~3.A.2.1.3 Swine 🡪 Other (please specify)~~*
* *~~Agriculture 🡪 3.A Livestock 🡪 3.A.2 Manure Management 🡪 3.A.2.2 N2O and NMVOC Emissions 🡪 3.A.2.2.3 Swine 🡪 Other (please specify)~~*~~Same issue as above.~~
* *~~LULUCF 🡪 4.B Cropland 🡪 4.B.1 Cropland Remaining Cropland 🡪 Carbon stock change~~*~~Same issue as above  
  Also filtering by~~ *~~Total CO2~~* ~~(which is the only GHG to filter by) gives the~~ *~~Error: Aesthetics must be either length 1 or the same as the data (319): fill~~* ~~error.~~
* *~~LULUCF 🡪 4.D Wetlands 🡪 4.D.1 Wetlands Remaining Wetlands 🡪 Carbon stock change~~*~~Year graph is different from what it should be.~~
* *~~LULUCF 🡪 4.E Settlements 🡪 4.2.1 Settlements Remaining Settlements 🡪 Carbon stock change~~*~~Year graph different from what it should be (changing when it shouldn’t).  
  Also filtering by~~ *~~Total CO2~~* ~~gives the~~ *~~Error: Aesthetics must be either length 1 or the same as the data (319): fill~~* ~~error.~~
* *~~LULUCF 🡪 4.E Settlements 🡪 4.E.2 Land Converted to Settlements 🡪 Carbon stock change~~*~~Same two errors as above  
  First error~~

### GHG Graph

# Brainstorming how to solve identical code issue:

We have a unique identifier in the GUID code of the node.

This only node specific, and doesn’t account for the year or GHG, and so the current code we have is still required in order to filter through these different facts.

We’re able to use these GUID codes to get the exact nodes that we want, but the problem lies in how we’re going to identify which of these nodes we need (which is our current problem).

*Location of Node in hierarchy* has essentially the structural breakdown of the hierarchy leading up to a specific node (up to but not including the current node that is).   
Using the current scheme where I’m keeping track of the *Previous* and *Current* categories using the reactiveValues *Category\_Selector*, perhaps it is possible to filter for the row/GUIDs based on the *Location of Node in hierarchy* which matches the sequence that we have defined (when we click on the next layer)  
Doing so would require us to reformat the *Previous* value from a vector to a string so that we’re able to append the new sub-section everytime we click.