

# Emission-driven greenhouse gases simulations

Here is an example of a list of prescribed greenhouse gases ([user\\_nl\\_cam](#)):

```
&chem_surfvals_nl
  flbc_list           = 'CH4', 'CCL4', 'CF2CLBR', 'CF3BR', 'CFC11', 'CFC113', 'CFC12', 'CH3BR', 'CH3CCL3',
  'CH3CL', 'CO2', 'H2',
  'HCFC22', 'N2O', 'CFC114', 'CFC115', 'HCFC141B', 'HCFC142B', 'CH2BR2', 'CHBR3', 'H24O2', 'OCS', 'SF6'
```

If you want to run without prescribed methane for example, remove 'CH4' from the list:

```
&chem_surfvals_nl
  flbc_list           = 'CCL4', 'CF2CLBR', 'CF3BR', 'CFC11', 'CFC113', 'CFC12', 'CH3BR', 'CH3CCL3', 'CH3CL',
  'CO2', 'H2',
  'HCFC22', 'N2O', 'CFC114', 'CFC115', 'HCFC141B', 'HCFC142B', 'CH2BR2', 'CHBR3', 'H24O2', 'OCS', 'SF6'
```

You might want to add your favorite emission file in `srf_emis_specifier` list and output 'SFCH4', 'DF\_CH4'.

Now the code in `components/cam/bld/build-namelist` will break because it contains the following:

```
# Make sure the flbc_list specifies all the GHGs needed for radiation.
my $flbc_list = $nl->get_value('flbc_list');
if (defined $flbc_list) {
  # If flbc_list has already been defined, check that it contains all
  # the GHGs needed by the radiation code.
  foreach my $ghg ('CO2', 'CH4', 'N2O', 'CFC11', 'CFC12') {
    if ($flbc_list !~ /$ghg/) {
      die "$ProgName - ERROR: $ghg is missing from flbc_list \n";
    }
  }
}
else {
  my $val = "'CO2','CH4','N2O','CFC11','CFC12'";
  add_default($nl, 'flbc_list', 'val'=>$val);
}
```

So you need to remove 'CH4' from the list:

```
# Make sure the flbc_list specifies all the GHGs needed for radiation.
my $flbc_list = $nl->get_value('flbc_list');
if (defined $flbc_list) {
  # If flbc_list has already been defined, check that it contains all
  # the GHGs needed by the radiation code.
  foreach my $ghg ('CO2', 'N2O', 'CFC11', 'CFC12') {
    if ($flbc_list !~ /$ghg/) {
      die "$ProgName - ERROR: $ghg is missing from flbc_list \n";
    }
  }
}
else {
  my $val = "'CO2','N2O','CFC11','CFC12'";
  add_default($nl, 'flbc_list', 'val'=>$val);
}
```