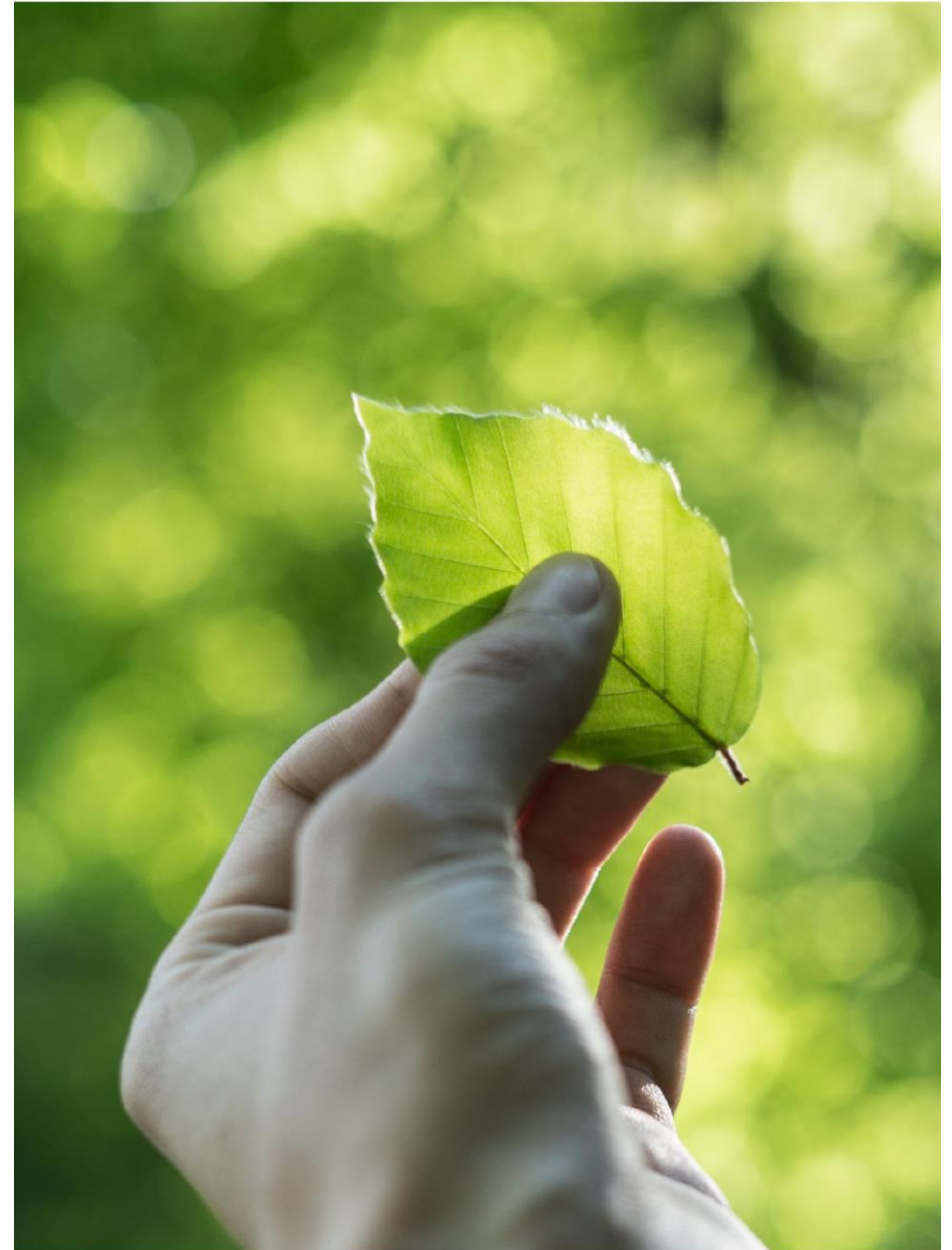




# Carbon Tax Mitigation

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2020 SAECC Conference  
Finance and Incentives Track



# Agenda

When are you liable to pay carbon tax?

How do you determine your liability?

How can the effect of Carbon Tax be mitigated?

What else can be done to trim your carbon tax burden?

Conclusion

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## When are you liable to pay carbon tax?

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# When are you liable to pay carbon tax

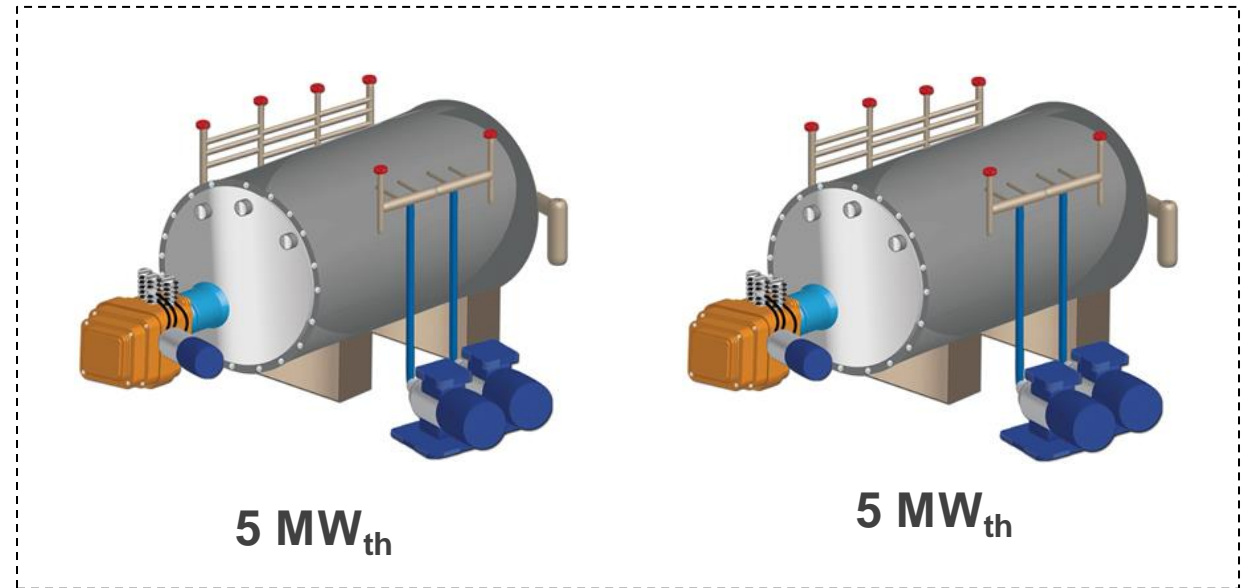
If you conduct an activity which is equal to or above the combined designed installed capacity of **10 MW (thermal)**

For example: boilers, dryers, diesel generators using fuel such as coal, natural gas, heavy fuel oil etc.

Processing plants with stacks / emissions – have different thresholds

If you exceed threshold – must report to Department of Environment, Forestry and Fisheries and hence potentially liable to pay carbon tax

Legal Tax Entity



# Agenda

When are you liable to pay carbon tax?

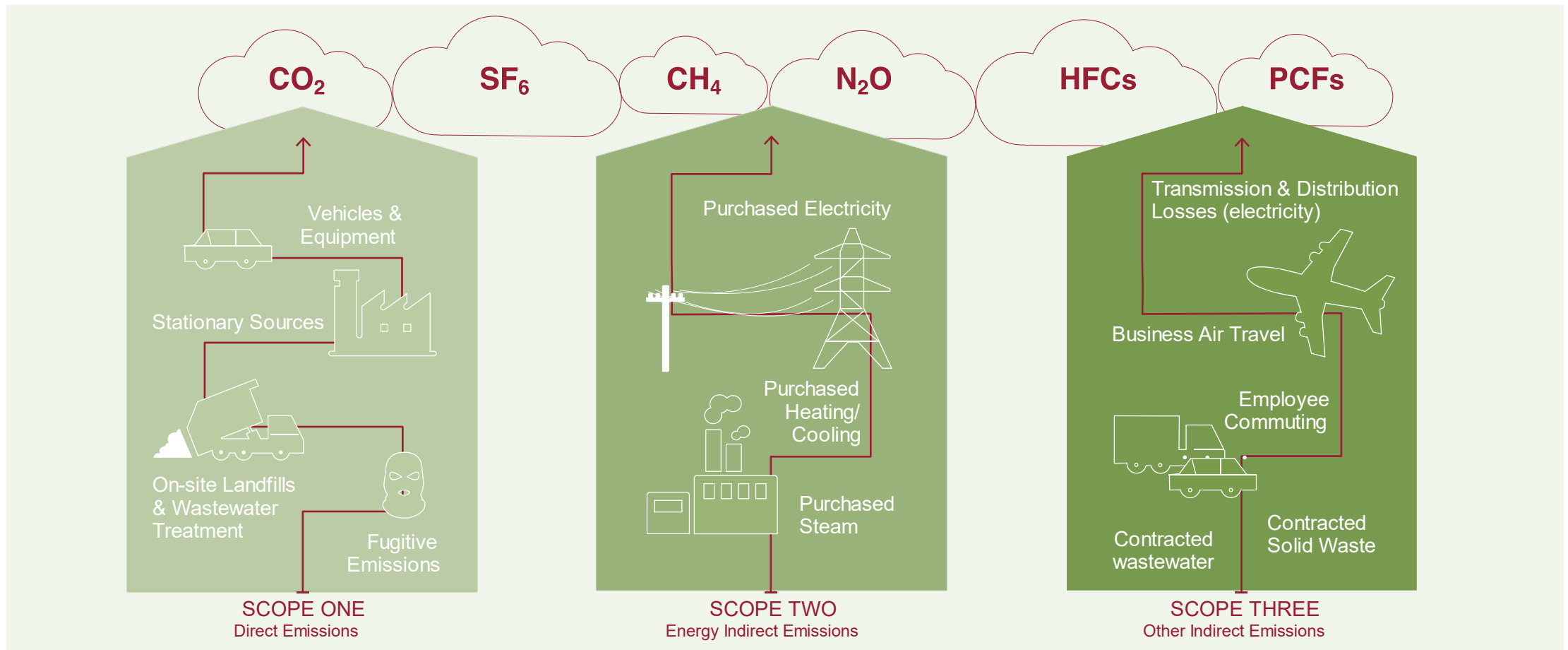
**How do you determine your liability?**

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# What is your gross liability?



# What is your gross liability?

**R120**  
per ton

The carbon tax is levied at R120 per ton CO<sub>2</sub>e on Scope 1 or Direct Emissions reported

Up to  
**95%**

For the first phase (up to 2022) the rebates are from 60% to a max of 95%

**R48**  
per ton

This translates to an effective carbon tax rate of between R6 – R48 per ton CO<sub>2</sub>e

Carbon Tax on petrol and diesel is already included in fuel price

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# Carbon Tax Calculation

$$X = \{ \underbrace{(E - S) \times (1 - C) - (D \times (1 - M))}_{\text{Fuel Combustion}} + \underbrace{(P \times (1 - J))}_{\text{Process}} + \underbrace{(F \times (1 - K))}_{\text{Fugitives}} \} \times R$$

Where:

**E = emissions from total fuel combustion (stationary fuel combustion)**

S = emissions sequestered

C = allowances for fossil fuel

D = emissions for petrol and diesel (stationary fuel combustion)

M = allowances for petrol and diesel

**P = process emissions**

J = allowances for process emissions

**F = fugitive emissions**

K = allowances for fugitive emissions

R = tax rate

# Carbon Tax Calculation

Fuel combustion only

$$X = \{ (E - S) \times (1 - C) - (D \times (1 - M)) \} \times R$$

Fuel Combustion

Where:

**E = emissions from total fuel combustion (stationary fuel combustion)**

S = emissions sequestered

C = allowances for fossil fuel

D = emissions for petrol and diesel (stationary fuel combustion)

M = allowances for petrol and diesel

R = tax rate

# Parameters that determines your carbon tax liability



The emissions emitted



Carbon sequestration



The carbon tax allowances



The tax rate

Where:

**E = emissions from total fuel combustion (stationary fuel combustion)**

S = emissions sequestered

C = allowances for fossil fuel

D = emissions for petrol and diesel (stationary fuel combustion)

M = allowances for petrol and diesel

R = tax rate

# Reducing Emissions

E = emissions from total fuel combustion  
(stationary fuel combustion)

Two options: Increased accuracy of emissions calculations and energy and emission reduction projects

The emissions values used as input to the carbon tax formula is a function of the following:

**Fuel consumption**

(measured)

**Calorific value of the fuel**

(default factors or measured)

**Emissions factors** (default factors or measured)

There are three tiers of emissions factors available to determine the emissions of a company. **Tier 1** is the default emission factor as provided in the technical guideline. **Tier 2** is the country specific emission factor and **tier 3** is the company specific emission factor.

**Tier 3 emissions** factors should be submitted to the Department of Environment, Forestry and Fisheries (DEFF) for approval.

**Tier 3 methodologies** might include amongst others, process models and direct measurements.

# Reducing Liability

## Example

Consider a boiler above the 10MW threshold with annual coal consumption of approximately 15,000 tonnes per annum.

The simplified example below assumes that the tier 3 emission factors, measured calorific values and measured consumption values were found to be 3.5% less than the default values.

	(Kg CO <sub>2</sub> /TJ)	(Kg CH <sub>4</sub> /TJ)	(Kg N <sub>2</sub> O/TJ)	NCV (TJ/tonne)	tCO <sub>2</sub> e/ton coal	Coal consumption (Annual Tonnes)
Default	94600	1.00	1.50	0.0243	2.310	15 000
Measured	91289	0.97	1.45	0.0234	2.151	14 475

	tCO <sub>2</sub> e	Tax Rate	Carbon Tax	Carbon Tax after basic allowance	Tax Saving
Default	34652	R120	R 4 158 231	R 1 663 292	
Measured	31139	R120	R 3 736 720	R 1 494 688	
<b>Saving</b>			<b>R 421 511</b>	<b>R 168 604</b>	<b>10%</b>

A small change of 3.5% had a 10% effect on the overall carbon tax liability.

# Carbon sequestration

S = emissions sequestered



Carbon sequestration is the long-term removal, capture or sequestration of carbon dioxide from the atmosphere to slow or reverse atmospheric CO<sub>2</sub> pollution.



A methodology will be published soon for public comment in order to assist companies to make use of carbon sequestration to reduce their tax liability.



Once the methodology is published companies will be in a position to assess whether it might be a worthwhile option to them to reduce their carbon tax liability.

# Carbon Tax Allowances

C = allowances for fossil fuel

Basic allowance	• 60% Basic Allowance
Process/Fugitive Emissions Basic allowance	• 70% Allowance for Process Emissions
Trade exposure allowance	• Up to 10% for Trade Exposed Companies
GHG Intensity Benchmark	• 5% Performance Benchmark Allowance
Carbon Offsets	• 5% - 10% allowance for Carbon Offsets
Carbon budgets	• 5% allowance participate in Carbon Budgets

Automatically qualify for Basic Allowances

# Agenda

When are you liable to pay carbon tax?

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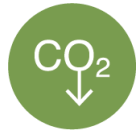
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# What else can be done to trim your carbon tax burden?



The most obvious solution to reduce emissions is to invest in carbon reduction and energy efficiency project(s).



Implementing energy efficiency projects will not only reduce your carbon tax liability it will also qualify for the Section 12L tax incentive for energy efficiency.

# What is Section 12L

Incentive aimed at promoting the investment in energy efficient equipment and improvement in processes to increase energy efficiency

Section 12L is a notional additional tax allowance for energy efficiency savings achieved and verified by a SANAS accredited Measurement and Verification body

12L has been effective since November 2013 with an increased rate of 95c/kWh effective for all years of assessment starting on or after 1 March 2015

All energy savings from fossil fuels will qualify (coal, gas, diesel, electricity etc)

## Potential Tax Savings

R	0.27	per kWh electricity saved
R	2.57	per l of paraffin saved
R	2.83	per l of diesel saved
R	2.95	per m <sup>3</sup> of natural gas saved
R	3.69	per kg LPG saved
R	2.03	per kg Coal saved

# Section 12L

## Qualifying activities

Having regard to the definition of “energy efficiency savings” in the Regulations and the content of the standard, any activity that results in energy efficiency savings may qualify for a deduction if all the necessary requirements are met. This will, for example, include activities that:

result in the same production volumes being produced using less energy, or that results in a product being produced using less energy.

allows for more products to be produced while using the same amount of energy, or that increases the product yield per unit of energy.

captures some or all of the energy from a waste stream that was previously discarded.

# Section 12L

## Qualifying activities

In addition, activities generating energy from combined heat and power as well as those that involve the use of qualifying captive power plants are also considered eligible activities. A person generating energy through a captive power plant will, however, qualify only if the energy-conversion efficiency of the captive power plant is greater than 35%.

$$\text{Conversion efficiency} = \frac{\text{Energy generated (usable energy)}}{\text{Energy input (chemical energy in fuel source)}} > 35\%$$

The term “captive power plant” is defined in paragraph 1 and means: “where the generation of energy takes place for the purposes of the use of that energy solely by the person generating that energy”.

# Section 12L

## Non-Qualifying activities

**Renewable Sources:** The general rule is that energy generated from renewable sources (other than energy generated from combined heat and power) does not qualify. The term “renewable sources” is defined as energy generated from:

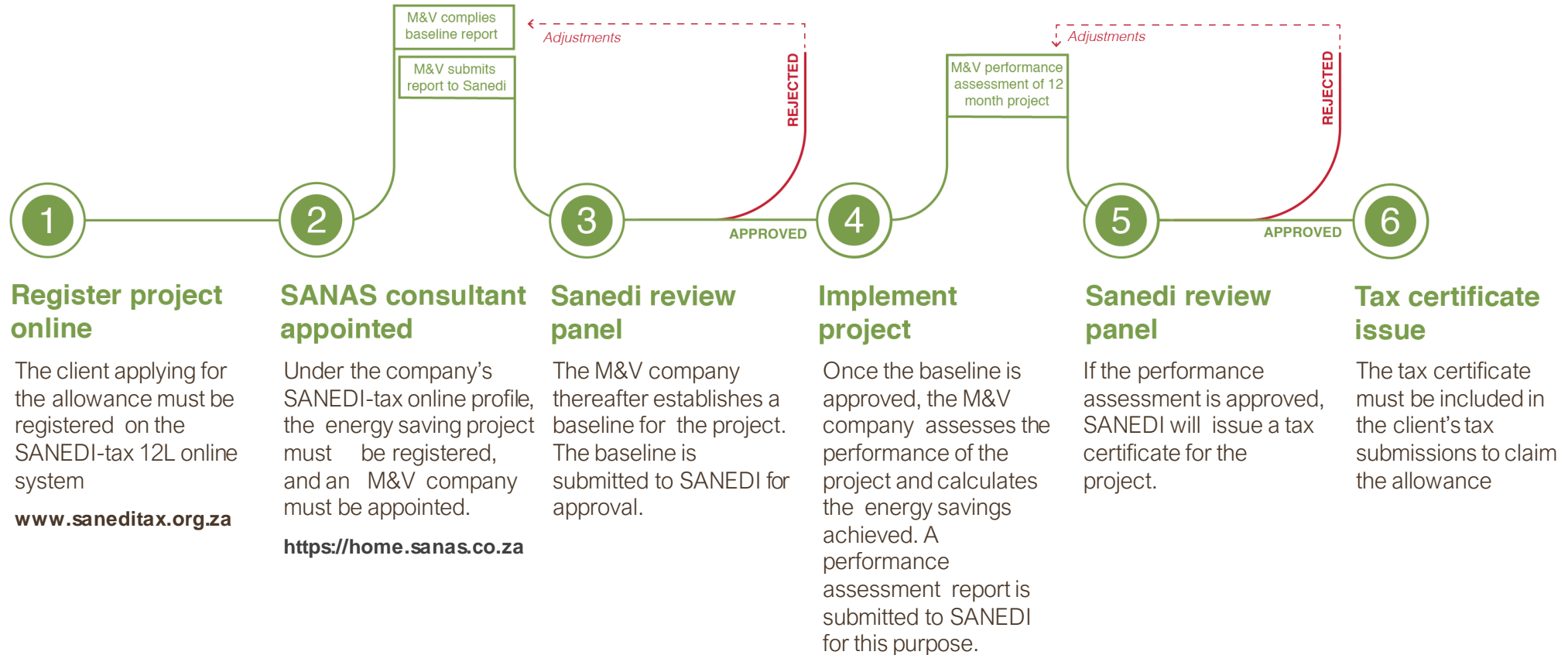
- biomass;
- geothermal;
- hydro;
- ocean currents;
- solar;
- tidal waves; or
- Wind

The generation of energy from biomass is an exception to the general rule. If biomass is produced specifically to generate energy, any resultant energy savings will not qualify for a deduction under section 12L. However, should biomass be a waste product resulting from a particular industrial process, it may be considered under the definition of combined heat and power. Such waste can then be re-introduced into the process to improve the energy usage of the plant. *Example: Forestry industry using woodchips.*

**Concurrent benefits:** Under section 12L, a taxpayer receiving a concurrent benefit relating to the same **energy-efficiency savings** will not be able to claim a deduction under section 12L.

# Section 12L

## SANEDI Process



# Section 12L

## Example

A business could save R266 000 on its annual tax by saving 1 million kilowatt hours of energy. See how in the example below, which can be used to calculate your own project's savings estimate:

### Calculate tax incentive:

Verified savings: 1 000 000 kwh  
Incentive rate: R0.95 per kwh  
Tax incentive amount: **R950 000**

### Business annual net profit:

<b>Without 12L</b>	← R2 000 000	→ <b>Using 12L</b>
R2 000 000	(Example)	R2 000 000
x 28%		- R950 000
<hr/>		
<b>R560 000</b>		R1 050 000
Tax payable		x 28%
<hr/>		
		<b>R294 000</b>
		Tax payable

### Money saved using 12L:

R560 000 – R294 000 = **R266 000 SAVED**  
+ money saved on energy bills during the implementation of your project

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# Conclusion



Carbon Tax is currently applicable to scope 1 emissions.

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Companies that conduct an activity which is equal to or above the combined designed input capacity of 10 MW (thermal) will be liable to pay carbon tax.

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There are multiple options available to companies to trim their carbon tax burden. They include:

- Improving accuracy of emission quantification which can be done through:
  - The utilisation of Tier 3 emission factors instead of the default Tier 1 factors,
  - Using measured calorific values of fuels instead of the default values,
  - Accurate measurements of fuel consumption.
- Carbon sequestration – Methodology still to be finalised by DEFF.
- The carbon tax allowances – There are various carbon tax allowances available to help reduce your carbon tax liability.
- Energy and Carbon reduction projects.
  - Applying for the Section 12L tax incentive for energy efficiency.

# Contact us

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