

Mexico: How material substitution in the metal industry can reduce emissions

The production and processing of metals, minerals and other materials is a major contributor to climate change. In fact, according to the International Resource Panel (IRP), it accounts for almost one quarter of the world's greenhouse gas emissions. Going beyond energy efficiency and using materials more efficiently offers both environmental and economic benefits – and it's key to achieving the goals of the Paris Agreement.

In its 2020 report on resource efficiency and climate change, IRP set out seven strategies that public and private sector stakeholders can use to achieve greater material efficiency and foster climate action:



Using less material by design



Fabrication yield improvements



Product lifetime extension



Material substitution



Enhanced end-of-life recovery and recycling of materials

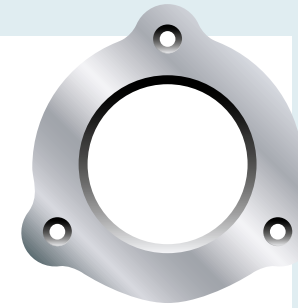


More intensive use



Recovery, remanufacturing & reuse of components

The Mexican company RUSAVE reduces emissions by substituting materials and changing their production process. While these are small contributions in the grand scheme of things, the combined efforts of small and medium-sized enterprises play a major role in addressing climate change.

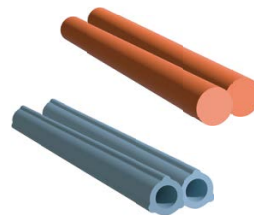


Material substitution

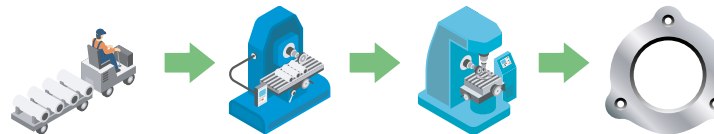


Using less material by design

RUSAVE offers customised manufacturing solutions for bathroom accessories, such as hot water boilers, taps and more. One essential element to connect pipes in the assembly of devices are flanges.

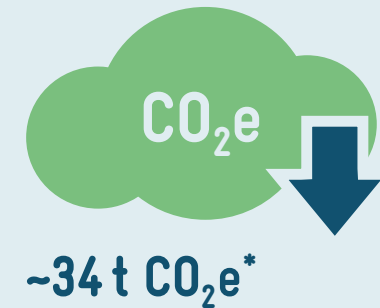


Normally, these are cut from a round brass rod into pieces, preheated, forged, cooled down and then threaded. RUSAVE **changed their manufacturing approach**. Aluminium rods now arrive with preformed extruded profiles, and company workers only have to cut the rod and drill clamping holes.



Using this new process and different material not only saves time and energy, but also **reduces greenhouse gas emissions by almost 90%. This cuts costs by 20%** – a good way to convince other companies to use similar processes.

Annual savings through material efficiency in the production of 360,000 flanges per year:



*Equivalent to the GHG emissions of eleven flights from Mexico to Berlin.

TACKLE CLIMATE CHANGE...

...by making material efficiency

part of your climate strategies.

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