

## What is Co-processing?

- Co-processing refers to the manufacturing process where **biomass-based feedstocks are processed simultaneously with traditional feedstocks** to displace fossil fuel production, which cannot be separated once processed.
- The process of hydrotreating biomass-based feedstocks produces a fuel with chemical properties that fall within the same specified range as ultra-low sulfur diesel manufactured from crude oil using traditional refining methods.
- Co-processing rates are constrained by engineering and economic limitations. Rates will vary by refinery and for hydrotreating, this could be up to the region of 20 percent bio-content.

## BP Contact Information



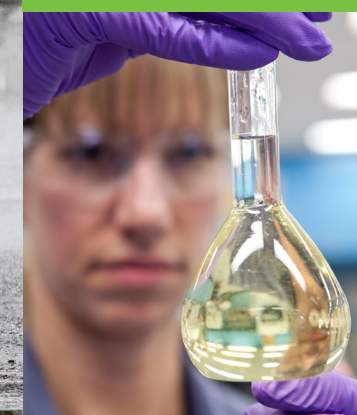
## Meeting GHG Emissions Reduction Goals Through Refinery Co-processing

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BP's investment in Co-processing at its Cherry Point Refinery has resulted in up to **300,000 metric tons per year of CO<sub>2</sub> being reduced** from its diesel production.

That's equivalent to **removing 115,000 cars from the road** each year.

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## Advancing the Energy Transition

The world is growing like never before, creating opportunity for billions of people. And all this growth requires energy. But as the world demands more energy it also demands that it be produced and delivered in new ways, with fewer emissions.

**At BP, we embrace this dual challenge.** We have always looked to the future, adapted to change and met challenges like this head on.

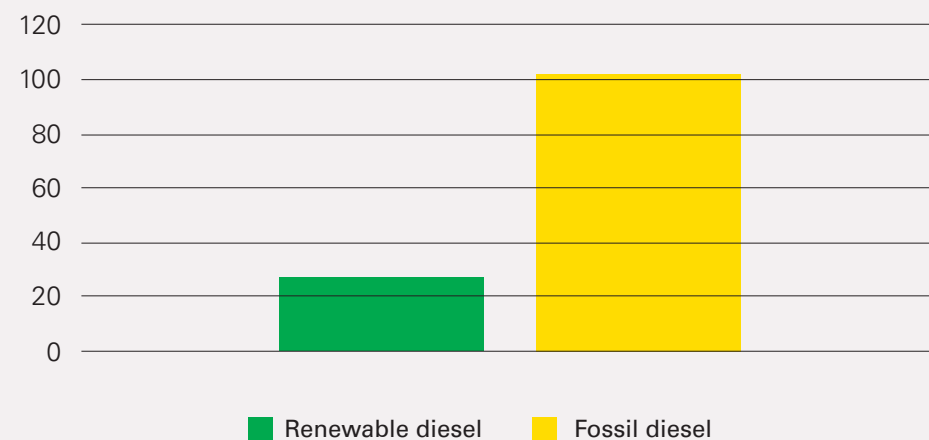
Refinery Co-processing transforms biomass-based feedstocks alongside traditional feedstocks. **Food waste and by-products are converted.**

BP has experience with Co-processing biomass feedstocks through refineries operated in Australia and Spain. In February 2018, BP's Washington State Cherry Point Refinery became **our first in the U.S. to begin Co-processing biomass feedstocks** to produce a renewable diesel blend.

On the West Coast, jurisdictions such as California, Oregon and British Columbia have introduced low carbon fuels programs to reduce the carbon intensity of transportation fuels by up to 20 percent.

**BP's Co-processed renewable diesel has only 25 percent of the GHG footprint of fossil diesel**

Life Cycle Emissions (CO<sub>2</sub>e/MJ)



The 25 percent claim is based on GREET 3.0 for California Air Resources Board provisional pathway using tallow feedstock.

## Co-processing Regulatory Improvements

Where capabilities exist, **Co-processing is one of the most efficient ways to reduce a fuel's GHG footprint**, but this still requires regulatory incentives to be commercially viable.

Not all refineries can easily deploy Co-processing, so where such refineries do exist, they should be encouraged through GHG regulation to maximize their potential.

In order to deliver the full potential of supply chain GHG reductions, **mass balancing is needed** to access regional program incentives.

## Importance of Supply Chain Mass Balancing

How easy would it be to buy renewable electricity if you had to build a separate grid from renewable sources to your home?

Because the energy is the same, the electricity can share the same infrastructure but is accounted for between supplier and purchaser **without having to track through the supply chain**, which is physically impossible.

Co-processed renewable diesel is indistinguishable from fossil diesel. It too needs to share the same infrastructure in order to maximize its potential. The same indirect accounting method should be adopted.



**Co-processing is one of the most efficient ways to reduce a fuel's GHG footprint.**

