

## **R-Power Tallow Biodiesel Method 2B Pathway**

### **Plant Summary**

R-Power operates a new biodiesel plant in Redwood City, California. R-Power uses a standard FAME transesterification process to produce biodiesel from tallow generated and rendered in California. R-power's feedstock suppliers utilize a high-energy rendering process.<sup>1</sup> The plant has a production capacity of about 2,000 gallons per day (730,000 gallons per year), but plans to expand the existing plant to 42,000 gallons per day (15.3 million gallons per year). R-Power has no long-term operational history.

The R-Power plant resides on property leased by Seaport Refining and Environmental (Seaport), which operates a transmix facility adjacent to the R-Power plant. The Seaport facility provides R-Power with significant quantities of waste heat from its petroleum products distillation operation. Before the R-Power plant went into operation, this heat was vented to the atmosphere. R-Power captures this waste heat by routing heated diesel fuel from Seaport through a series of heat exchangers. Approximately half of R-Power's thermal energy needs are met by waste heat from Seaport. R-Power's remaining energy requirements are met by power purchased from local utilities.

### **Carbon Intensity of the Fuel Produced**

The Low Carbon Fuel Standard (LCFS) lookup table currently contains no tallow-to-biodiesel pathways. Therefore, the R-Power pathway falls under the Method 2B provisions of the LCFS. Because R-Power's application was submitted under the Method 2B process, it is not subject to the substantiality requirements with which Method 2A applications must comply (a minimum improvement of five gCO<sub>2</sub>e/MJ, and a minimum production volume of ten million gallons per year).

Rather than develop a biodiesel pathway specific to its Redwood City plant, R-Power chose to combine ARB's tallow-to-renewable diesel and soybean-to-biodiesel pathways into a single tallow-based biodiesel pathway. R-Power left most of the default ARB input parameters unchanged in its CA-GREET analysis. Only the electrical generation energy mix and transportation distance parameters were changed to reflect California production of both finished fuel and feedstock. As a result, R-Power's pathway is generic for California biodiesel producers who utilize tallow that is generated and rendered in-state. Once it is approved, therefore, the R-Power pathway will be added to the LCFS Lookup Table, and be available to all producers whose actual pathways are substantially similar to those developed by R-Power. The proposed R-Power pathway carbon intensity is shown in Table 1.

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<sup>1</sup> ARB developed two tallow-to-renewable diesel pathways. These pathways differ only in the amount of energy used to render the feedstock. The high-energy process uses more energy to heat the tallow than does the low-energy process.

**Table 1: Proposed Lookup Table Entry**

<b>Fuel/Feedstock</b>	<b>Proposed Lookup Table Pathway Description</b>	<b>Carbon Intensity in gCO<sub>2</sub>e/MJ (Including Indirect Effects)</b>	<b>Do Special Conditions Apply? (Y/N)</b>
Biodiesel/Tallow	Tallow to biodiesel	34.11	N

**Staff Analysis and Recommendation**

Staff has reviewed the R-Power Plant application, and finds the following:

- Staff replicated, using the CA-GREET spreadsheet, the carbon intensity values calculated by the applicant; and
- Staff agrees that the plant's actual energy consumption will not exceed the energy consumption levels specified in R-Power's Method 2B application.

On the basis of these findings, staff recommends that R-Power's application for a Method 2B pathway be approved.