

# MOVIALSA, SPAIN

**Size:**  
5.9 MWe & 6.6 MWth

**Project status:**  
Commissioned

## Background:

Spain produces approximately four million tonnes of olive pomace waste annually. Because it contains high concentrations of polyphenols, lipids and organic acids, if olive wet pomace is not properly dried and

disposed of, it seeps into the ground, changing the acidity and polluting soil and water. This is becoming a significant issue for the industry throughout the Mediterranean region.

## More information

Combustion of dried olive pomace waste in biomass boilers or combustion plants is becoming more difficult due to environmental legislation. The energy costs of producing olive oil are also increasing year on year.

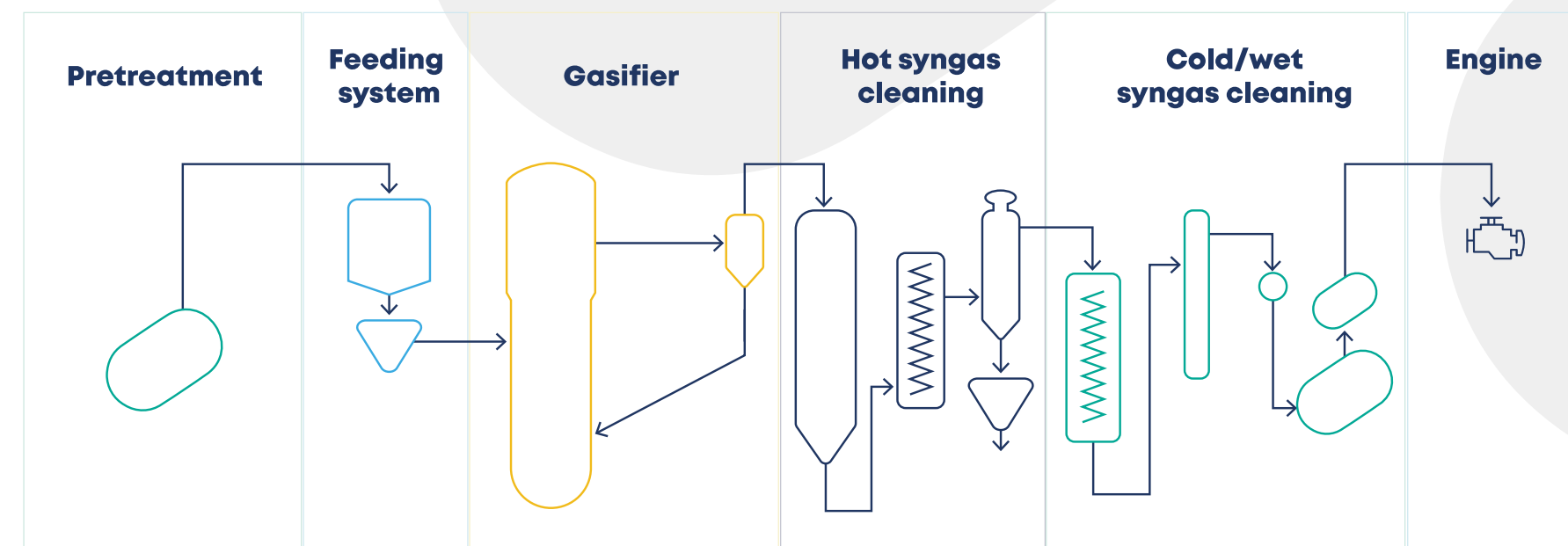
In 2011, EQTEC built a gasification plant at Movialsa in Ciudad Real, Spain to help solve this problem using a unique specialisation in converting this agricultural food waste into pure syngas. Olive pomace waste is a difficult feedstock to process due to its high content of sodium and potassium, alkaline metals with very low melting points. The second challenge was the need to make seasonal adjustments to the balance of electricity and heat production from the plant.

Over the years, we have developed and perfected our Advanced Gasification Technology at this plant. As a result, we've been able to process olive pomace residue successfully, creating the first fully operational business case in the world for this feedstock, operating without subsidies or incentives.

Since 2011, the plant has clocked in over 110,000 audited operating hours through its 3 GE Jenbacher engines, fed by a single EQTEC gasifier, producing 5.9 MWe of electricity and 6.6 MWth of steam – all from "difficult" to process olive pomace waste. This means not only is the plant successful, it is also the oldest and largest commercial scale gasification plant in this industry.



## Biomass-to-energy configuration



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## Technical Specification

<b>Location</b>	<b>Cuidad Real, Spain</b>
Size (MWe / MWth size)	5.9 MWe & 6.6 MWth
Electrical efficiency	28%
Total efficiency (electrical & thermal)	64%
Feedstock	Olive Mill Pomance *high ash content, with high content of alkaline metals (K, Na) and very low melting point.
Feedstock throughput	17,000-20,000 tonnes per annum
Engine	3x GE Jenbacher 620
Operating temperature range	720-750°C
Operating hours	111,000+ (third party certificates available)
Commission / Due Date	2015
Type (Commercial/R&D Pilot)	Commercial
Category (biomass-to-energy, biomass-to-bioenergy, RDF-to-energy)	Biomass-to-energy
Applications (Electricity, thermal, biochar, biofuels)	Electricity, thermal

### Externally audited operational data (2015 – 2020)

Parameter	Unit	2015	2016	2017	2018	2019	2020
	hrs/year	8,600	7,300	7,060	7,800	7,314	8,157
Plant availability	%	98	90+	90+	90+	90+	93
Equivalent electrical efficiency	%	45	39	38	39	38	38
Electricity / feedback ratio	KW/kg	1.4	1.4	1.4	1.4	1.4	1.4