Milestone 5.3 Attachment F

Provide evidence of energy efficiency (relationship between monitored irrigation/crop data and energy consumption)

This analysis considers direct cost and savings related to efficiency gains from the pumping drive unit and the input value of solar generation.

Re Milestone 4.3 information - Data to end December 2018 is based on the winter, spring and early summer period of 2018 (Season 2018/2019 for harvest June to December 2019). The crop estimate is a yield potential based on the current progress of the crop and crop demand, growth estimates and economic analysis are therefore specific to the current 6 month period.

Re Milestone 5.3 information - Data to end June 2018 is based on whole of season estimate (Season 2018/2019 for harvest June to December 2018) and crop demand and growth estimates are therefore a 12 month period – irrigation data is for the full season July 2019 to June 2019 – irrigation effectiveness over the second half of the period was severely impacted by almost unprecedented drought conditions and yield potential was severely affected

Period	Date	Farm average Growth cm	Estimated tc/ha/100cm height at harvest	Estimated tc/ha progressive	Area irrigated ha 2019 crop	Estimated tc/farm	Season crop water demand (mm)	Applied irrigation (mm)	Irrigation as % of crop water demand
Milestone 4.3- progressive crop estimate	31 Dec 18	100	45	45	55	2475	Est 383	90	23.56
Milestone 5.3 – final crop estimate for 2019 harvest	30 June 19	140	35	49	55	2695	Actual with drought 651	290	44.54

2018 - 2019 irrigation cost and savings per tonne cane

	Date of last reading	Total irrigation hours	Total motor kWh	Mains kWh	Average Mins kWh	Solar kWh saving	Average solar kWh/hr	VFD kWh saving	Average VFD kWh/hr	Ergon Tariff $/kWh	Total cost Mains	Cost per tonne cane (tc)
New pumping system mains input	30 June 2019	1437	40423	11788	8.2					0.26442	$3116.98	$1.08
New pumping system solar input						28635	19.92			0.26442	$7571.66	
New pumping system VFD input								15620	10.86	0.26442	$4130.24	
Old pumping system pre replacement cost		1437	56043	56043						0.26442	$14818.89	$5.49