Mayo 2016

Caso de Éxito

Sistema de Agua Potable en el Estado de Guanajuato.

Se suministró un Variador de frecuencia de 700HP, 460V, 60Hz para un bombeo de Agua potable, la razón de este proyecto es el ahorro de energía. Anteriormente esta batería de bombeo se arrancaba a tensión plena teniendo fuertes gastos en demanda por arranques y en consumo ya que el motor se mantenía a su máxima velocidad y el caudal se regulaba con una válvula.

En el nuevo proyecto la válvula se dejó abierta al 100%, y se conectó un variador de frecuencia el cual acelera con una rampa de 20 segundos evitando el pico de corriente en el arranque y así un cobro excesivo en la demanda, para bajar el consumo de Kw/hr el variador se programó a 54Hz trabajando los 365 días del año las 24 horas al día, así obtenemos un ahorro de 1,188,376 kWh anuales, a continuación se adjunta el estudio y estimación que se realizó con nuestro Software y se comprobó el ahorro en campo.

Para efectos de la noticia se tomó un precio de lista para el variador de frecuencia, el retorno de inversión real fue muy similar ya que se agregó la integración de gabinete e instalación. La moneda utilizada en el software son Dólares Americanos.

Energy Savings Estimator Report

Circuito Mexiamora PTE No.321
Parque Santa Fe
Silao, Guanajuato, México

Date: 5/24/2016

To: SISTEMA DE AGUA POTABLE GTO

Prepared by: Control Bussiness Unit

Project: PROYECTO AHORRO BOMBEO 1

Utility: CFE

Utility Rebate: $ 0.0; One-time

Cost per kWh: $ 0.06

Estimated Energy Savings

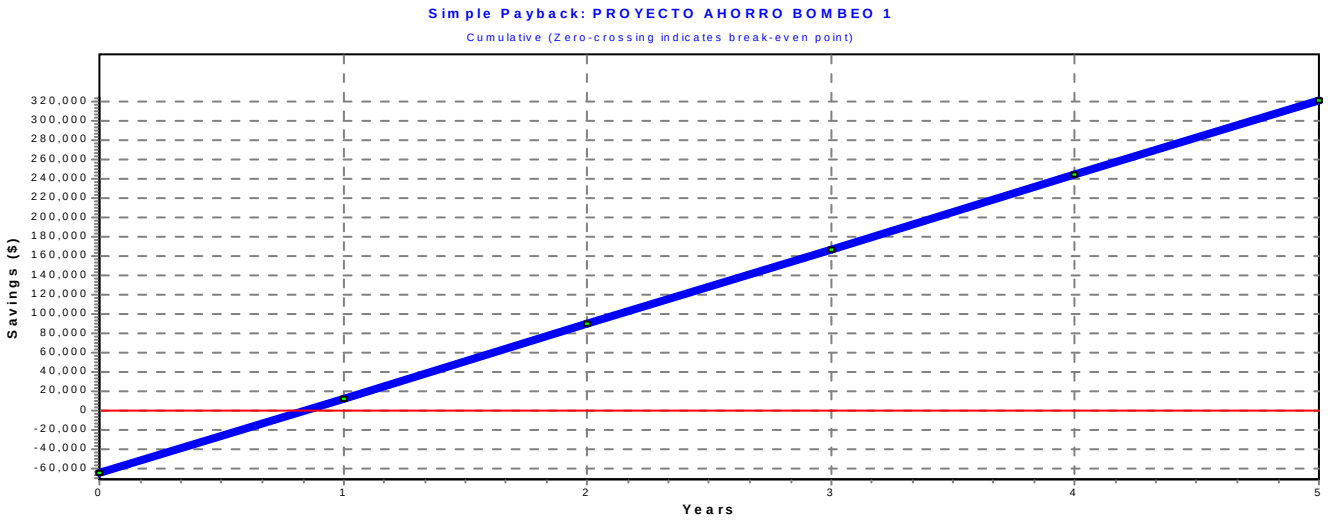
System	Energy Usage
Present System:	4,783,088 kWh
VFD System:	3,594,713 kWh
Energy Saved:	**1,188,376 kWh**

Estimated Savings:	Total
Energy Saved/Year:	$ 77,244
Yearly Savings:	**$ 77,244**

Estimated Carbon Dioxide Emissions

System	Carbon Footprint
Present System:	3,372.08 Ton(s)
VFD System:	2,534.27 Ton(s)
Carbon Dioxide Savings:	**837.80 Ton(s)**

Total Project Cost:	**$ 64,737**
Total Project Rebates:	**$ 0**
Estimated Payback Time/ROI:	**0.838 Years**



Carbon Dioxide (CO2) savings estimation based on electricity produced from Coal at 0.705 kg of CO2 per kWh

Weight Units: Metric

Calculations are based on available data. We assume no responsibility for the accuracy of the supplied data or of this report.

Bateria 1

System Data

Pump System

System Identification: Bateria 1

Type: Pump System

Flow Control: None (Across-the-Line)

Motor Data

Efficiency:	95.6 %
Power:	700 HP

Hours of Operation

Hours per Day:	24 Hours
Days per Week:	7 Days
Weeks per Year:	52 Weeks
Total Hours:	8,760 Hours/Year

Variable Frequency Drive Data

Drive Cost:	$ 64,737
Install Cost:	$ 0
# Systems:	1

Incentive

Utility Incentive:	$ 0 per HP; One-time

Duty Cycle

Flow (%)	Time (%)	Time (Hours)
100 %	0 %	0
90 %	100 %	8,760
80 %	0 %	0
70 %	0 %	0
60 %	0 %	0
50 %	0 %	0
40 %	0 %	0
30 %	0 %	0
20 %	0 %	0
10 %	0 %	0

Estimated Carbon Dioxide Emissions

System	Carbon Footprint Single	Carbon Footprint Total
Present System:	3,372.08 Ton(s)	3,372.08 Ton(s)
VFD System:	2,534.27 Ton(s)	2,534.27 Ton(s)
Savings:	**837.80 Ton(s)**	**837.80 Ton(s)**

Payback Analysis

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Equipment Cost:	$ 64,737					$ 64,737
Installation Cost:	$ 0					$ 0
Utility Rebate:	$ 0					$ 0
Energy Saved:	$ 77,244	$ 77,244	$ 77,244	$ 77,244	$ 77,244	$ 386,222
Total:	**$ 12,507**	**$ 89,752**	**$ 166,996**	**$ 244,241**	**$ 321,485**	**$ 321,485**

Estimated Energy Savings

Operating Info:	Single	Total
Operating Hours:	8,760 Hours	8,760 Hours
Present System:	4,783,088 kWh	4,783,088 kWh
VFD System:	3,594,713 kWh	3,594,713 kWh
Energy Saved:	**1,188,376 kWh**	**1,188,376 kWh**

Estimated Savings:	Single	Total
Energy Saved/Year:	$ 77,244	$ 77,244
Yearly Savings:	**$ 77,244**	**$ 77,244**

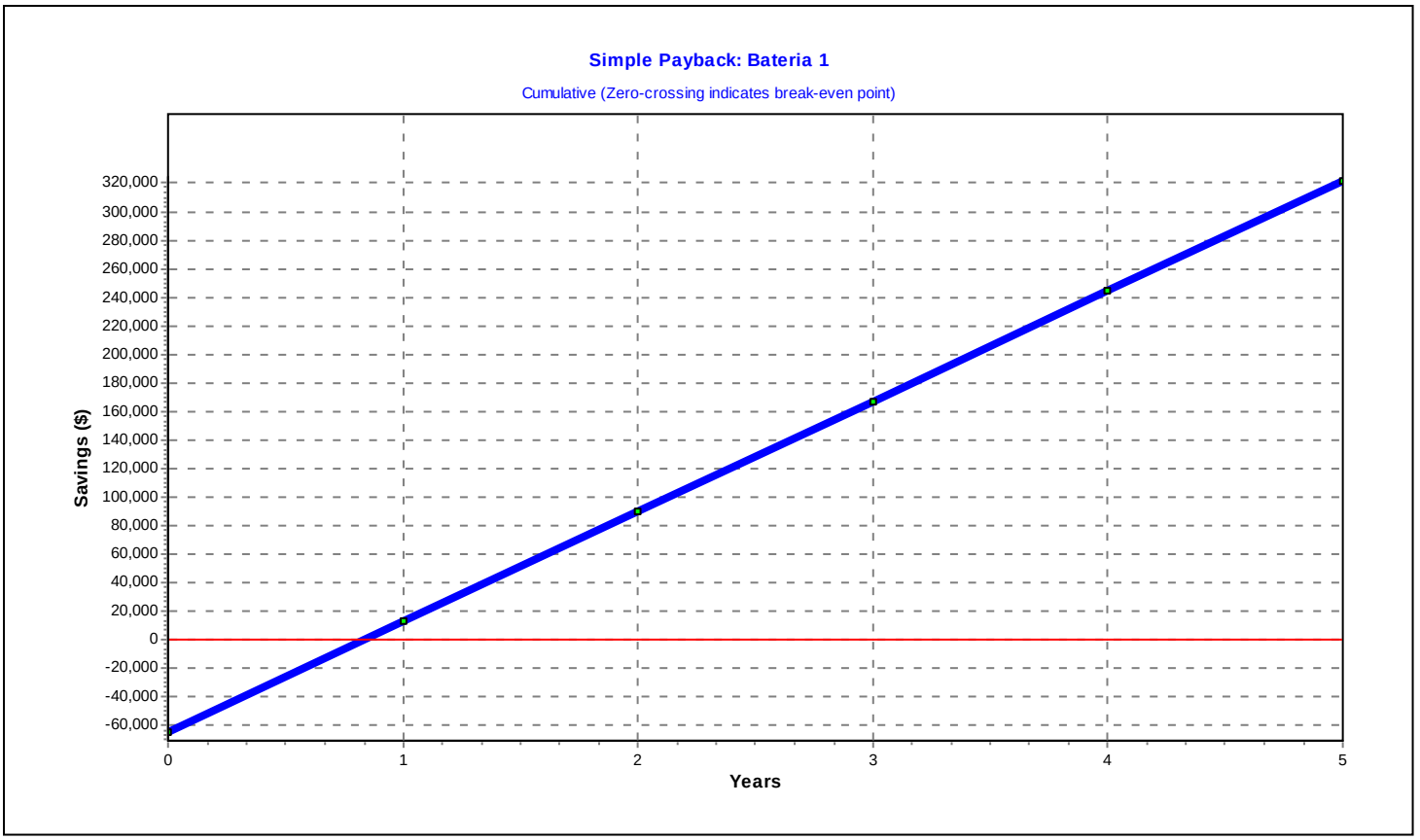
Estimated Payback Time: 0.838 Years

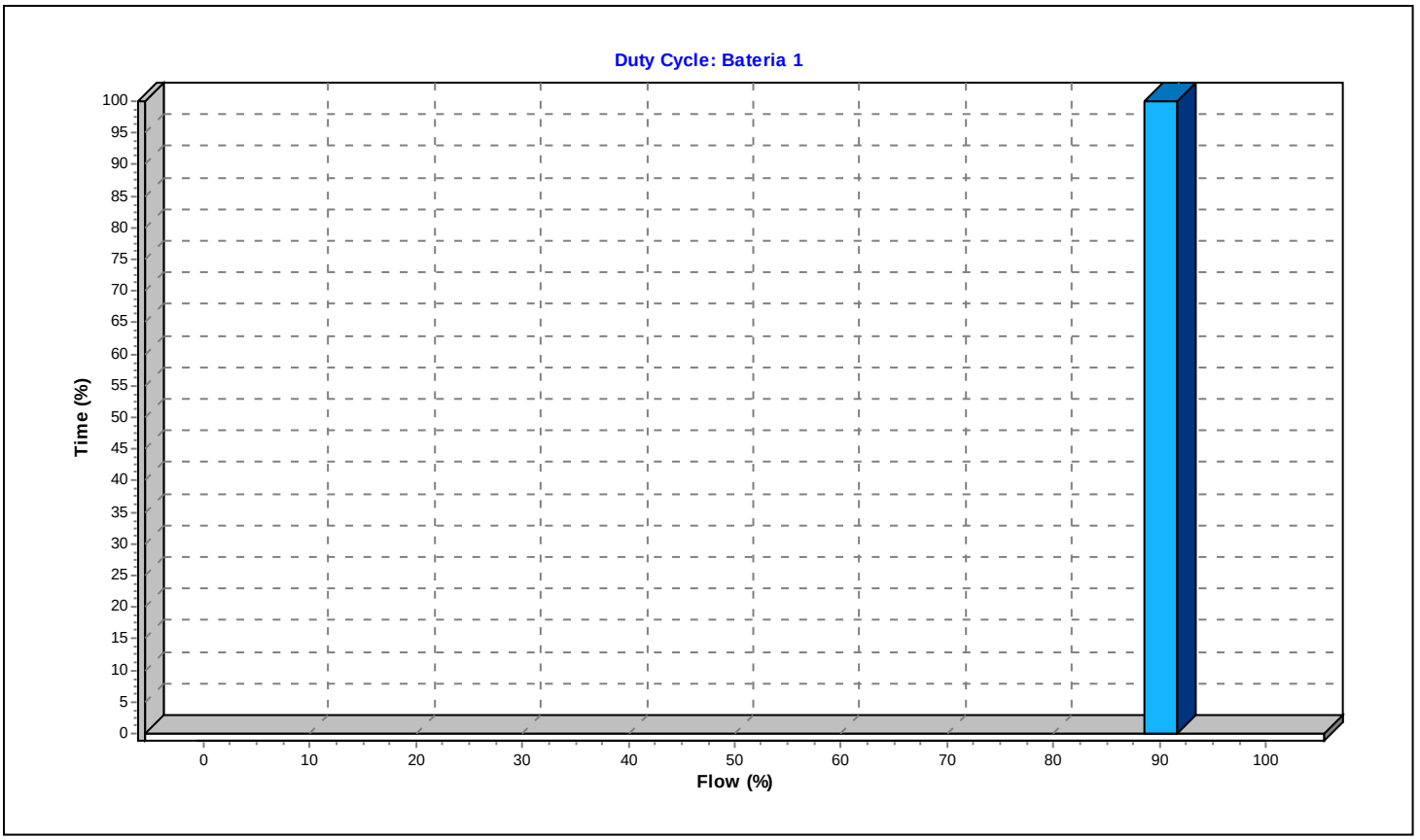
Carbon Dioxide (CO2) savings estimation based on electricity produced from Coal at 0.705 kg of CO2 per kWh

Weight Units: Metric

Bateria 1

Chart(s)





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Bateria 1

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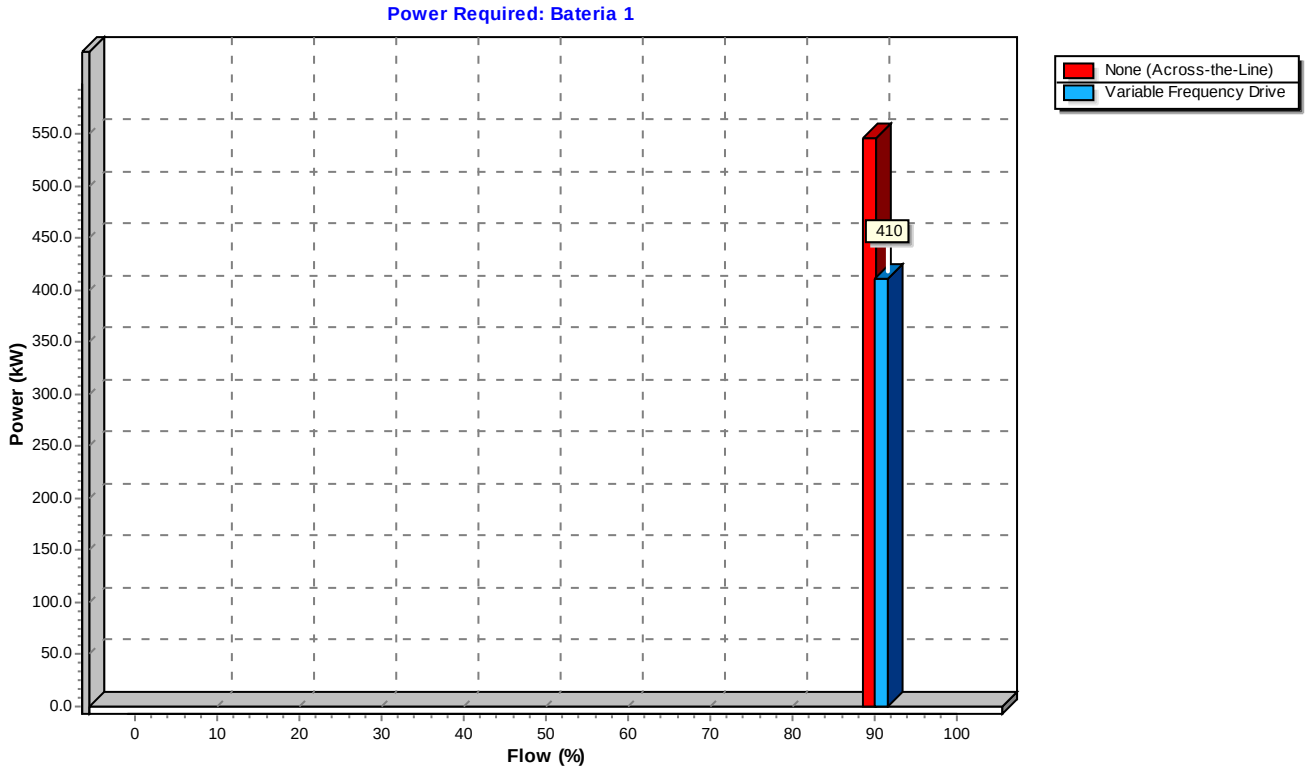

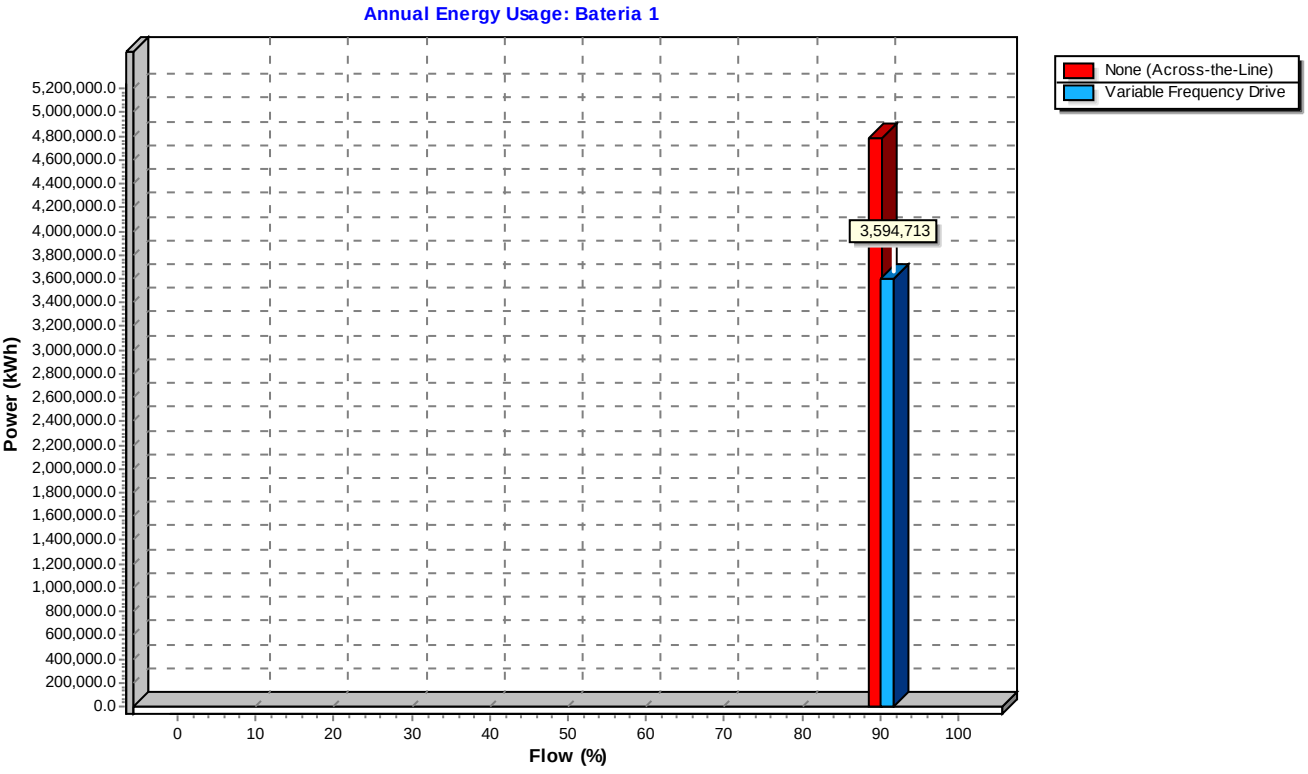

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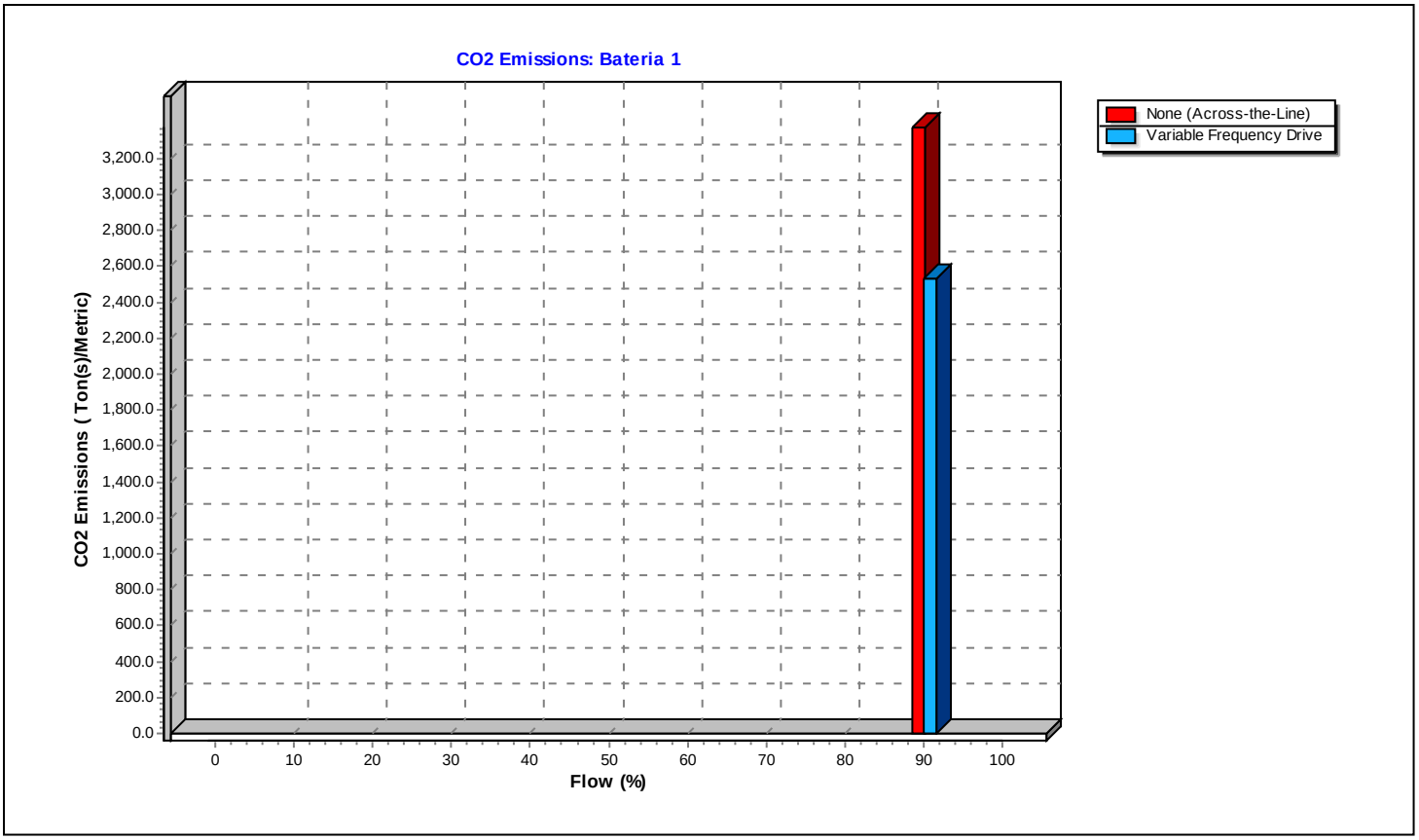

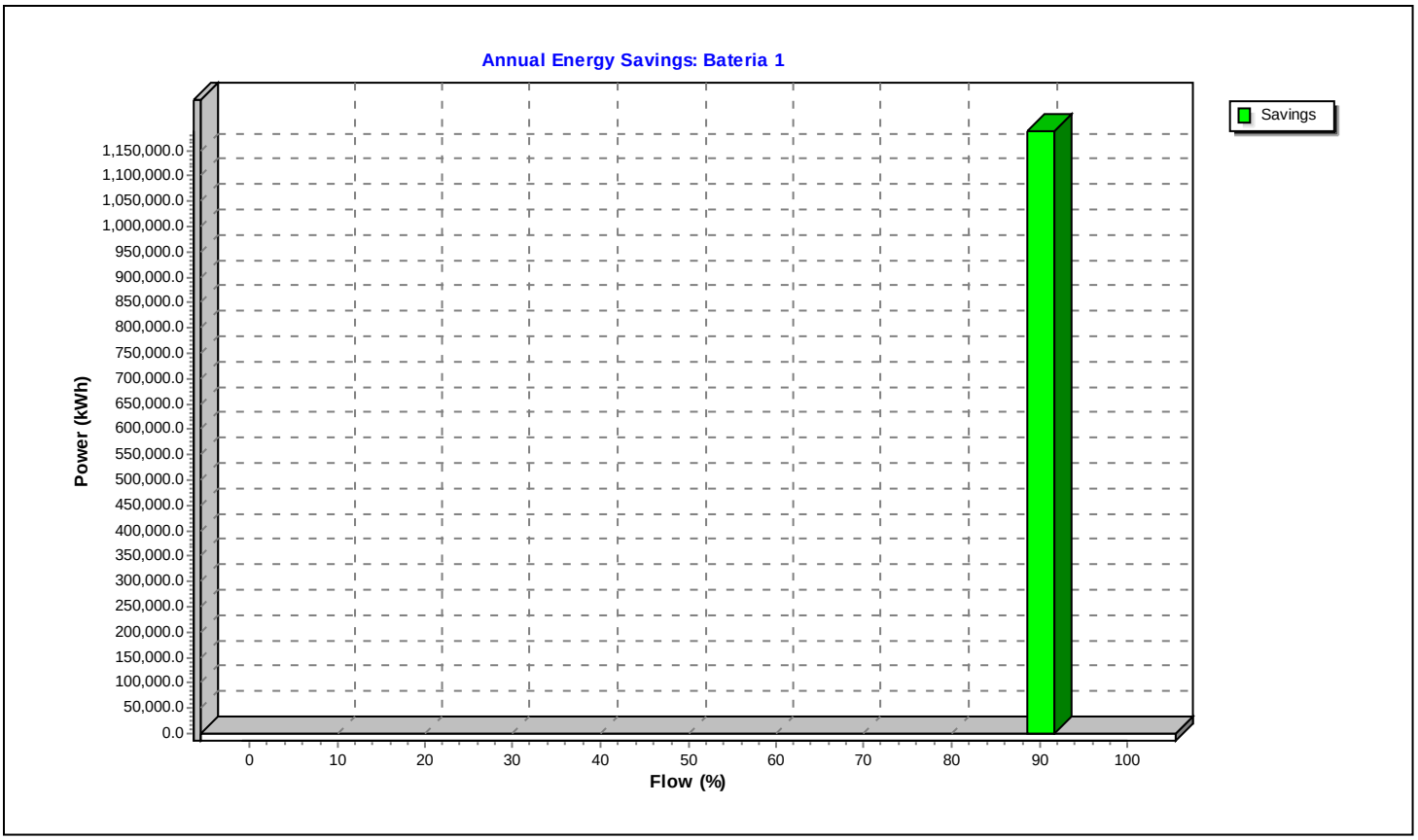

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