Manor Farm

Origin Green

In partnership with

Enviroeye Consulting Engineers

Micheál Galvin
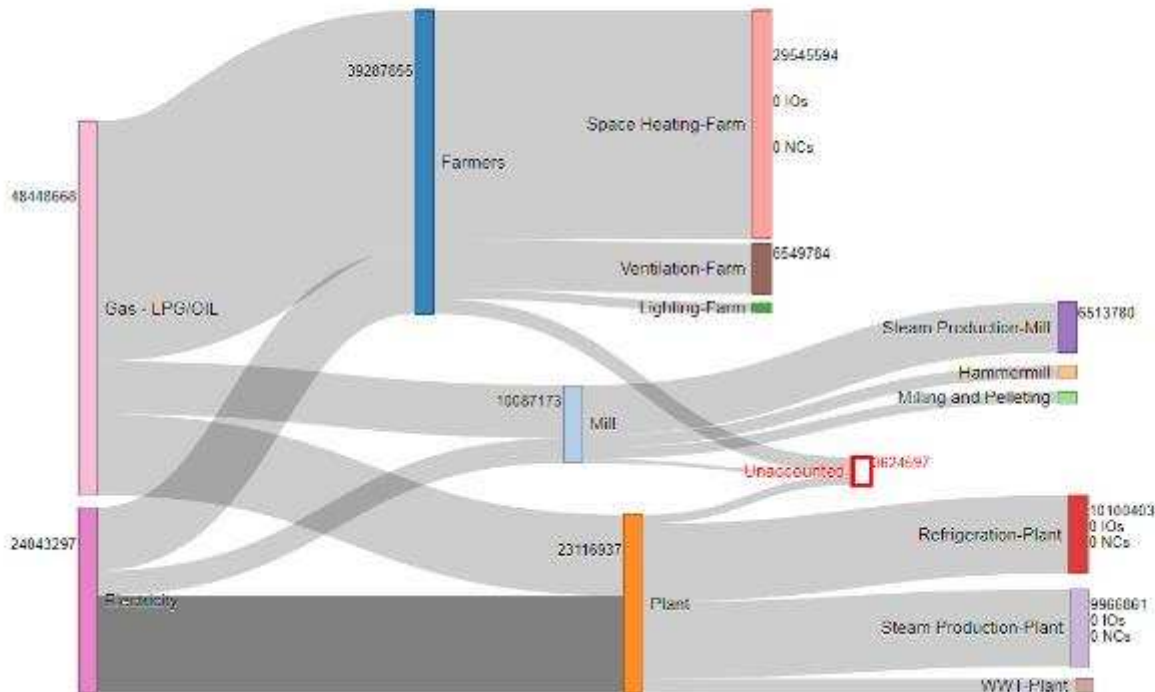BSc(Eng) MSc CEng MIEI

Energy Planning

Energy (kWh)   Cost (€)

Period: 01/01/2016 to: 31/12/2016

Energy Sources
Σ 72491965 kWh

Energy Uses
Σ 68867368 kWh

Energy Planning gives an overview of the site from energy sources to which SEU's are the most energy intensive. It also shows any energy that is unaccounted for.
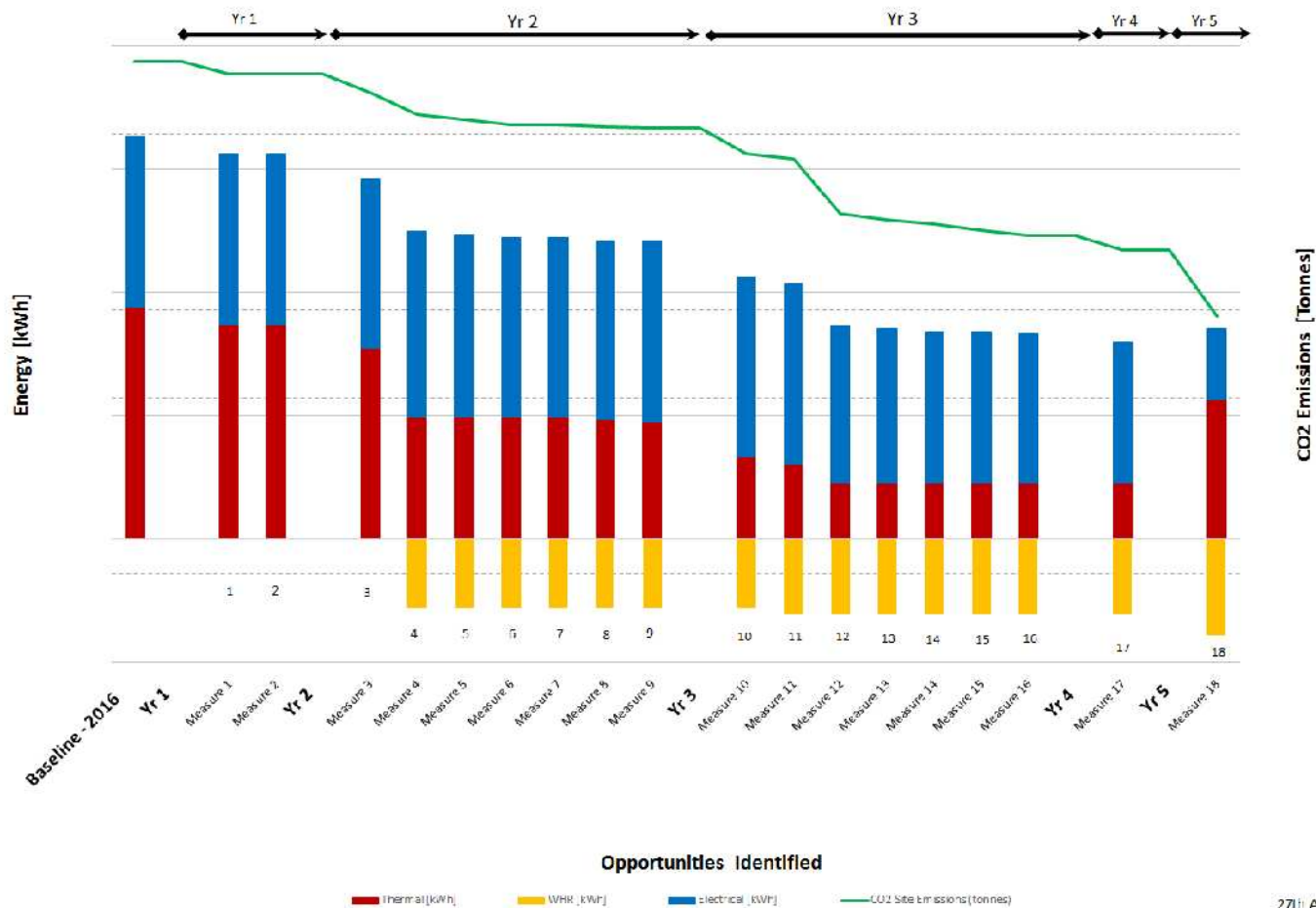
Energy Uses

Create Energy Use

Title	SEU		kWh	Location
Space Heating-Farm	○	🔥	29545594	Manor Farm
Refrigeration-Plant	○	⚡	10100403	Manor Farm
Steam Production-Plant	○	🔥	9966861	Manor Farm
Ventilation-Farm	○	⚡	6549784	Manor Farm
Steam Production-Mill	○	🔥	6513780	Manor Farm
WWT-Plant	○	✪	1893826	Manor Farm
Hammermill	○	⚡	1615282	Manor Farm
Milling and Pelleting	○	⚡	1453753	Manor Farm
Lighting-Farm	○	⚡	1228085	Manor Farm

◄◄ ◄ 1 - 9 /9 ► ►►

AGROCYCLE

Manor Farm – The Sustainable Strategy(Route)

Opportunities Identified

This project has received funding from the European Union's Horizon 2020 Research and Innovation programme under grant agreement No. 690142 in collaboration with the People's Republic of China and the Hong Kong Government

Manor Farm – Co2 – What are we doing about it ?

✛ Objectives & Targets

IO Estimated FOR REVIEW Cost Savings

Legend:
- Boilers (green)
- Gas Heating (blue)
- HVAC (red)
- Lighting (pink)
- Process Equipment (teal)
- Water (purple)
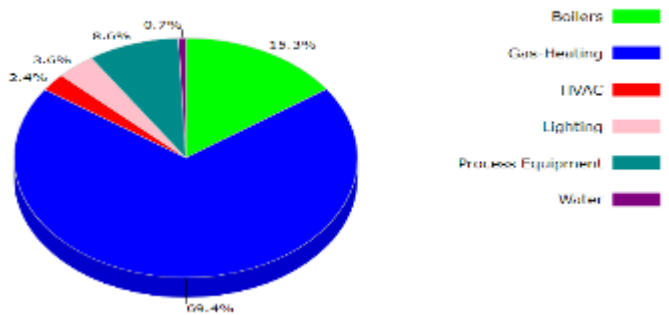
Objectives & Targets can be entered and tracked to see how the improvement opportunity is progressing.

Objectives & Targets	EnPIs O&Ts	Benchmark Data

2014 2015 **2016** 2017 2018 2019 2020

kWh	Objective		Total(kWh) Target	Total(kWh) To-Date	Electrical(kWh) Target	Electrical(kWh) To-Date	Thermal(kWh) Target	Thermal(kWh) To-Date
Total	68867368				2076906	0	17972797	0
▶ Space Heating-Farm – Manor Farm	29545594	50% Heat Recovery			0	0.00	14772797	0.00
▶ Refrigeration-Plant – Manor Farm	10100403	Save 10% on refrigeration			1010040	0.00	0	0.00
▶ Steam Production-Plant – Manor Farm	9966861	Save 20%			0	0.00	1750000	0.00
▶ Ventilation-Farm – Manor Farm	6549784	Save 5% on ventilation			327489	0.00	0	0.00
▶ Steam Production-Mill – Manor Farm	6513780	Save 20% on steam production			0	0.00	1450000	0.00
▶ WWT-Plant – Manor Farm	1893826	Save 5%			94691	0.00	0	0.00
▶ Hammermill – Manor Farm	1615282	Save 5%			80764	0.00	0	0.00
▶ Milling and Pelleting – Manor Farm	1453753	Save 5%			72688	0.00	0	0.00
▶ Lighting-Farm – Manor Farm	1228085	Save 40% on lighting in farms			491234	0.00	0	0.00

On The Farm – Energy Balance- One House

- 1 Kg of Feed GIVES 0.6 Kgs of LIVE Weight
  - FCR = 1.6
  - 1 Bird @ 2.2 Kgs = 3.5 Kgs of feed

Production Unit
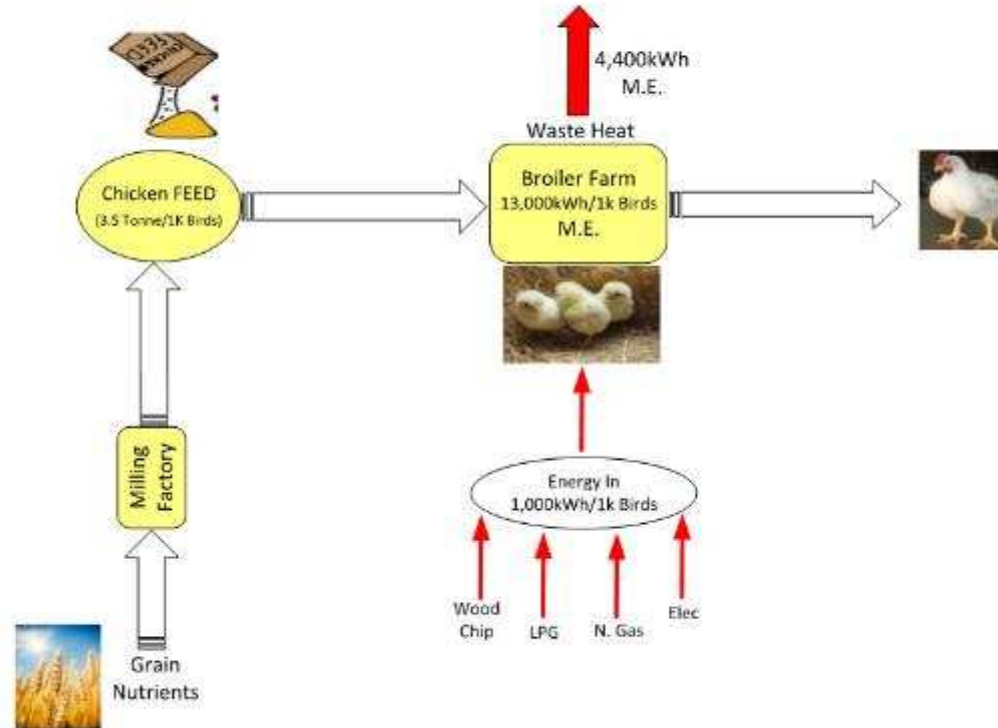 - 50,000 Broilers =175 tonnes @4t/acre = 43 Acres of space

Inputs:
  - Feed = 175 tonnes x 16 Mj/Kg = 823,429kWhe / 81,00 Oil [litres]
  - Energy-Space Heating =30,000kWh or 3,000 litres of Oil
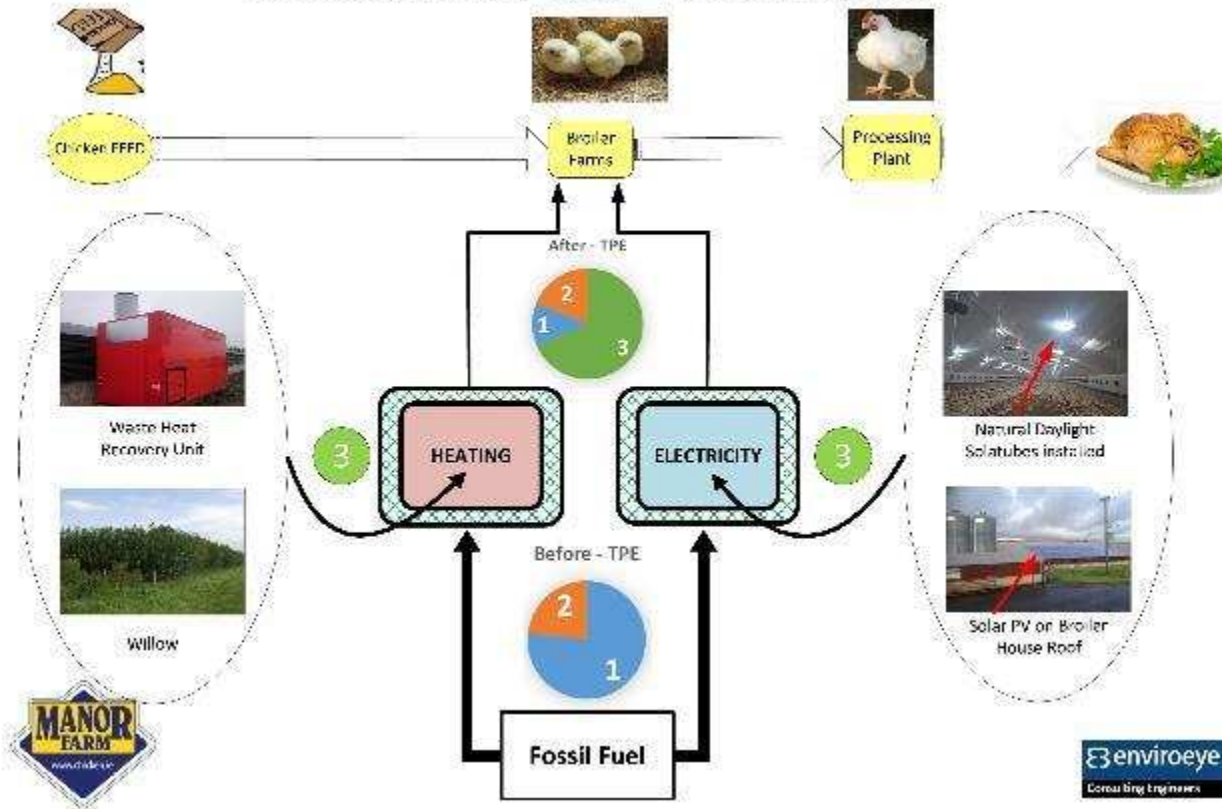 - Energy-Electricity = 10,000 kWh or 2,500 litres of Oil

Outputs:
  50 Tonnes litter(digested feed-13Mj/kg) per 50k Bird/Batch + Drum Sticks !!!!

  [Litter Energy is 191,176 kWh & Site Input Energy 40,000 kWh = 20%(Est)]

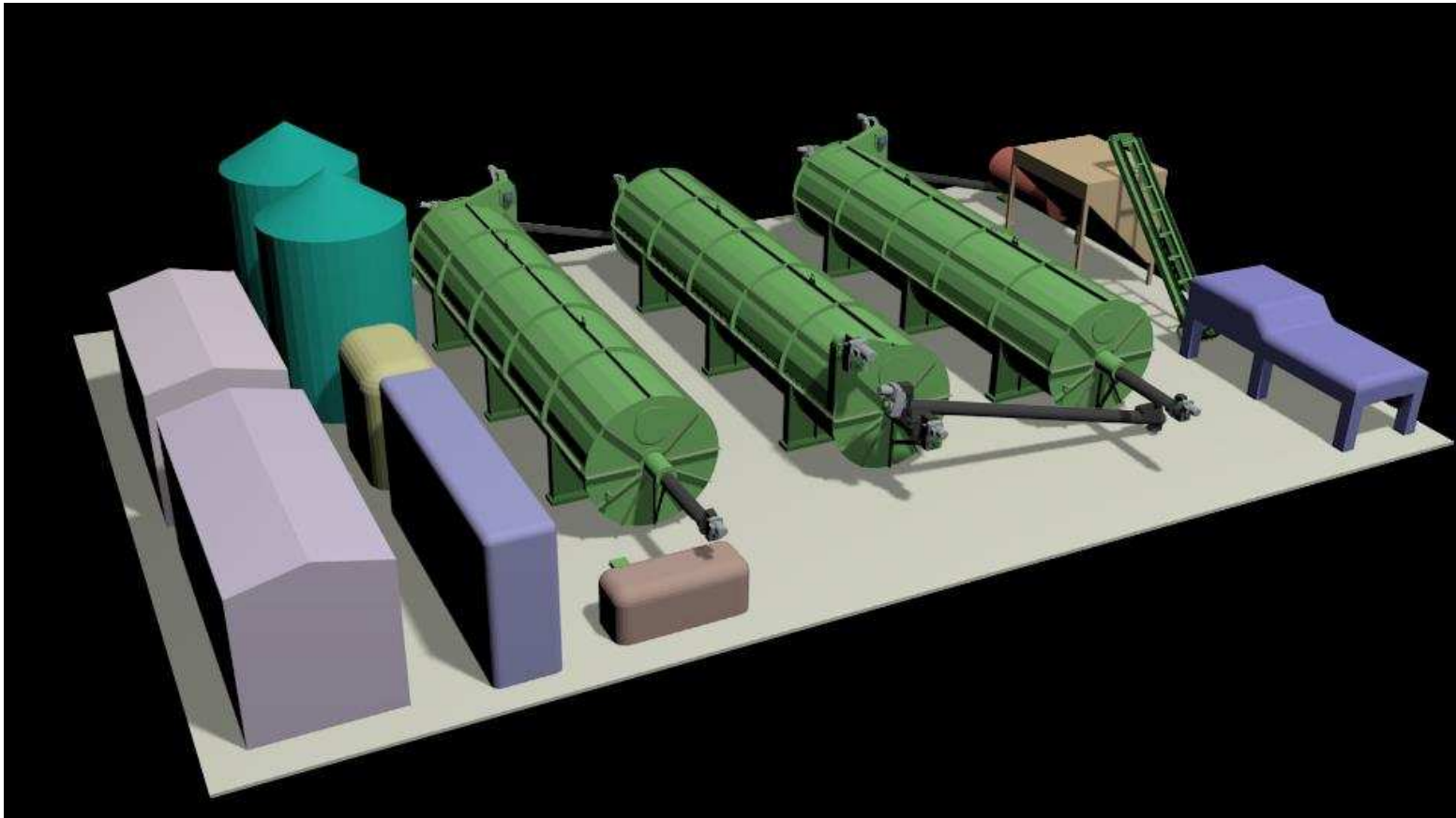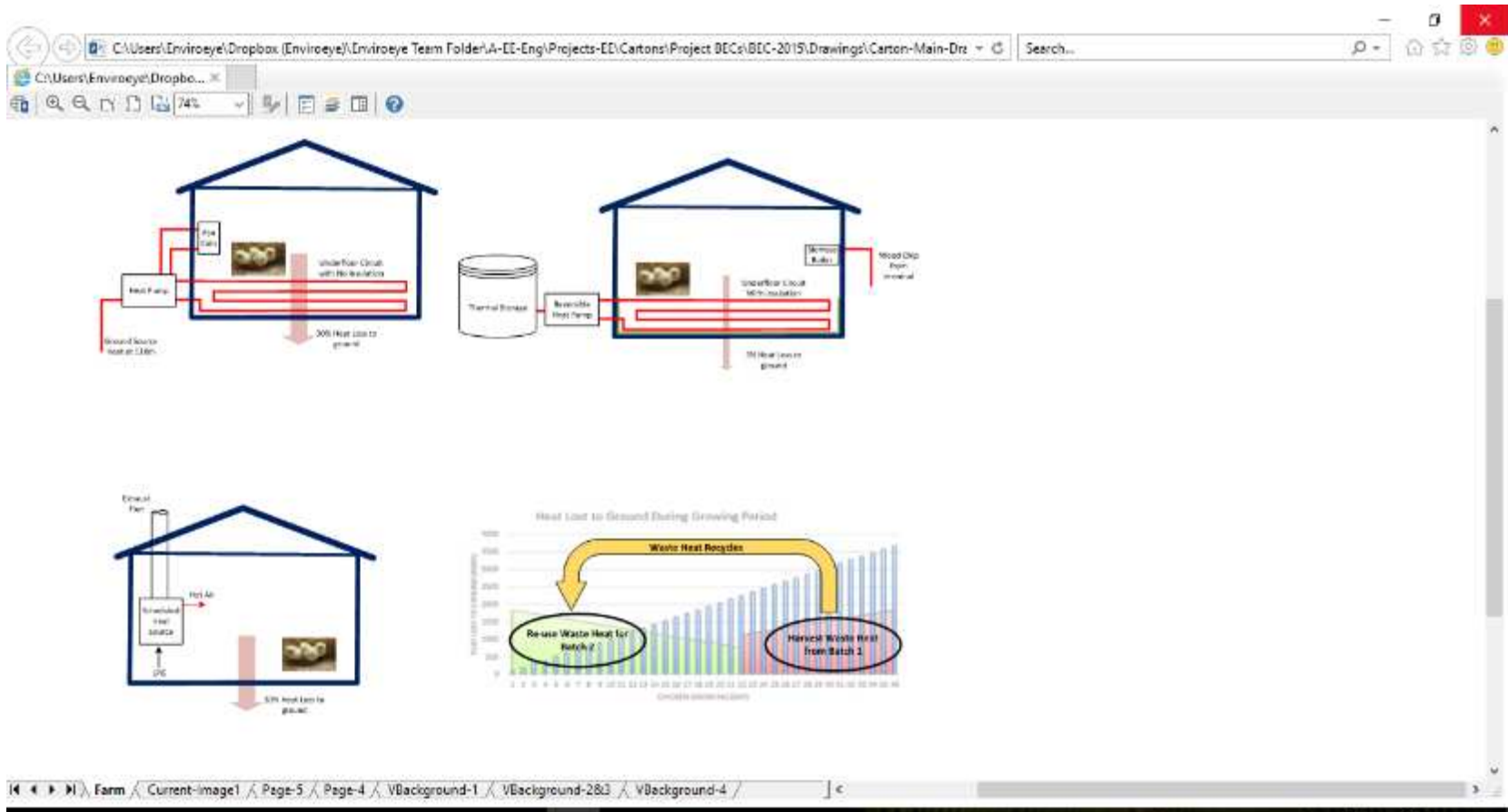Sustainable Supply Chain - Broiler Production

Harper Adams University – AD Digester (Mini)

Ideal Target @ AD-Dry [100% Poultry Litter]

Feed Energy – Recycle – Chick Heat