

Site: Imaichi

Location: Japan

Sector: Pharmaceuticals

Project Type: Energy Kaizen

Date: 2018

# HVAC Saving Opportunity Projects

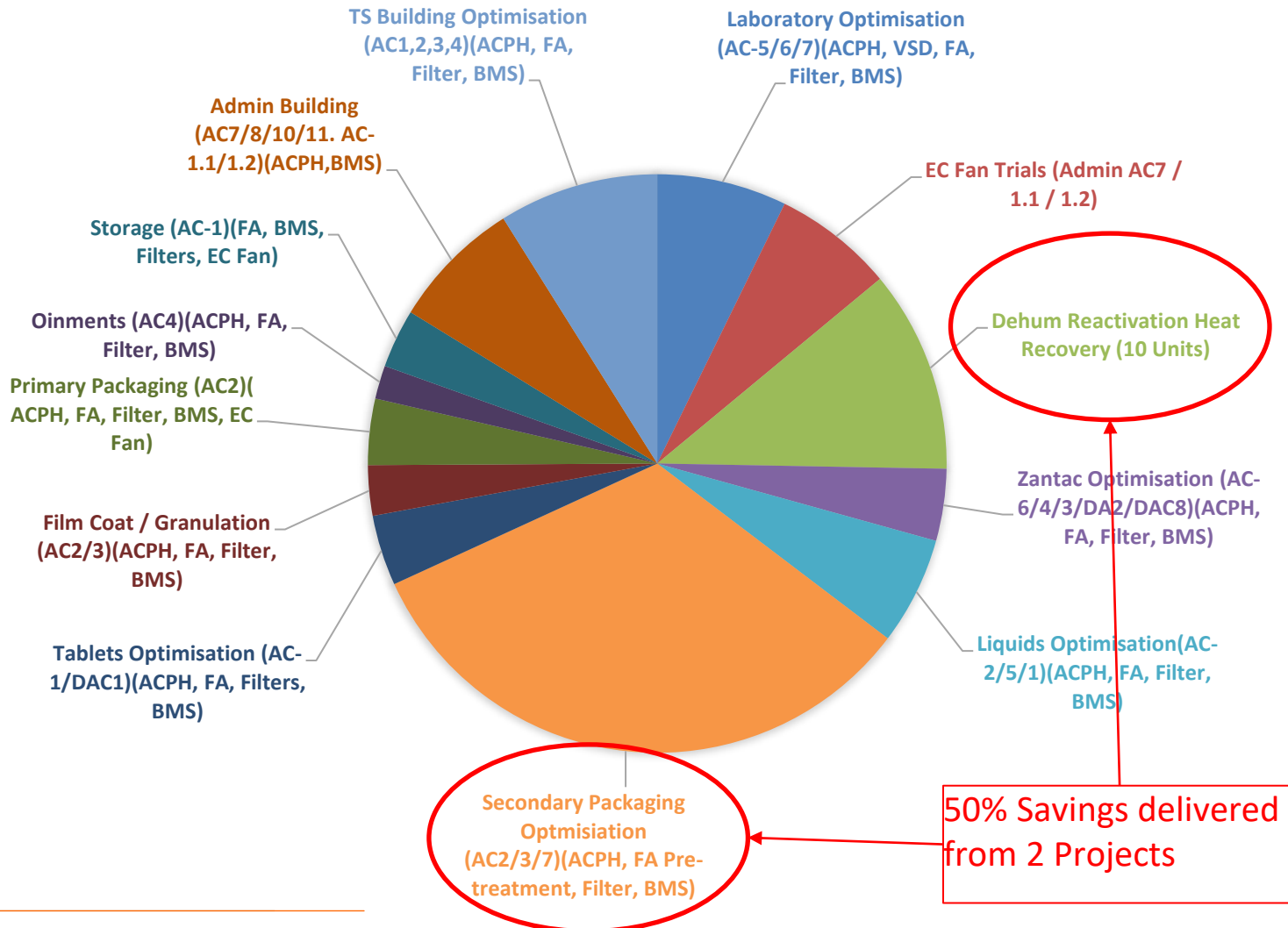


Project	Total cost (Yen)	Electrical Savings (kWh)	Gas Savings (kWh)	Total Identified Savings (kWh)	Total Identified Saving (CO2)	Total Cost Saving (Yen)	Payback (years)
Laboratory Optimisation (AC-5/6/7)(ACPH, VSD, FA, Filter, BMS)	3,325,000	£ 40,250	36,000	76250	29	788,855	4
EC Fan Trials (Admin AC7 / 1.1 / 1.2)	3,080,000	£ 48,000	-	48000	27	752,965	4
Dehum Reactivation Heat Recovery (10 Units)	5,180,000	£ -	298,667	298666.667	55	1,306,354	4
Zantac Optimisation (AC-6/4/3/DA2/DAC8)(ACPH, FA, Filter, BMS)	1,841,000	£ 24,660	31,435	56095	19	524,331	4
Liquids Optimisation(AC-2/5/1)(ACPH, FA, Filter, BMS)	2,758,000	£ 40,784	87,000	127784	39	1,020,303	3
Secondary Packaging Optmisation (AC2/3/7)(ACPH, FA Pre-treatment, Filter, BMS)	15,036,000	£338,001	475,000	813001	275	7,379,770	2
Tablets Optimisation (AC-1/DAC1)(ACPH, FA, Filters, BMS)	1,806,000	£ 41,150	49,753	90903	32	863,128	2
Film Coat / Granulation (AC2/3)(ACPH, FA, Filter, BMS)	1,288,000	£ 43,000	60,000	103000	35	936,968	1
Primary Packaging (AC2)( ACPH, FA, Filter, BMS, EC Fan)	1,694,000	£ 71,388	36,000	107388	46	1,277,309	1
Ointments (AC4)(ACPH, FA, Filter, BMS)	854,000	£ 31,400	53,000	84400	27	724,384	1
Storage (AC-1)(FA, BMS, Filters, EC Fan)	1,505,000	£ 34,305	40,000	74305	26	713,093	2
Admin Building (AC7/8/10/11. AC-1.1/1.2)(ACPH,BMS)	3,351,600	£ 80,000	182,000	262000	78	2,051,001	2
TS Building Optimisation (AC1,2,3,4)(ACPH, FA, Filter, BMS)	4,088,000	£ 24,612	26,236	50848	19	500,838	8
	<b>45,806,600</b>	<b>817,550</b>	<b>1,375,091</b>	<b>2,192,641</b>	<b>708</b>	<b>18,839,297</b>	<b>3</b>

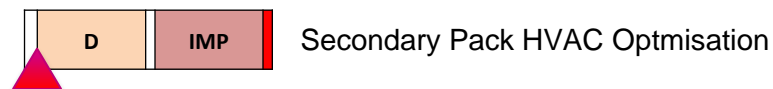
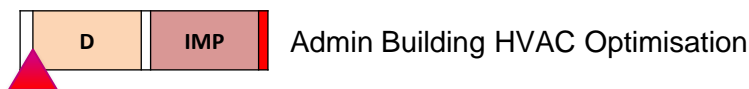
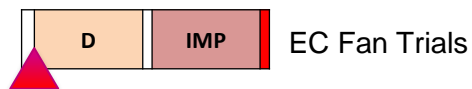
Capital 45 Million Yen  
ROI 3 Yrs

Expect HVAC projects to over deliver if delivered optimally

# HVAC Savings Projects



# HVAC Projects Plan to 2022



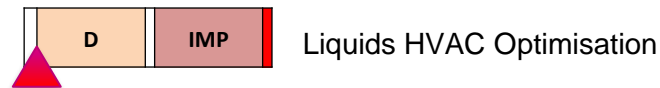
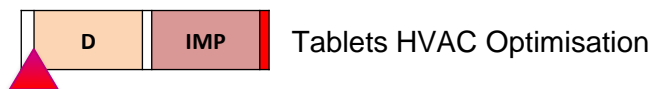
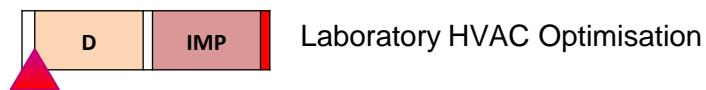
Approval

Start of benefit realisation

FED – Front End/Scheme Design

D – Detailed Design

IMP – Implementation



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3 More HVAC Projects out to 2022

- **Step 1 - Feasibility / Project development**
  - **Place order with EECO2 / SE for Feasibility Q3/4 2017**
  - Carry out feasibility study & Scheme design of all HVAC / BMS Projects
  - Engage with Quality & Corporate
  - EECO2 / SE / will support the master planning & feasibilities . Local delivery.
  - Option to Provide temporary M&T for project & future measurement of benefits( EECO2™ MEMU™) Evidence for M&T investment
  - Training of Site technicians during project
  - Delivery Project with minimum / zero shut downs ( 3-4 days) HVAC Project
  - Agree roll out strategy and develop detail programme to ensure delivery
- **Step 2 - Energy Project Delivery 2018 – 2022**
  - **Place Order for EECO2 SE Feasibility for HVAC Projects**
  - EECO2 / SE support coordinated HVAC programme
  - QA Support & documentation
  - Engage to provide feasibility & developed Design
  - Local delivery of Projects supported by EECO2
  - Training & Support to site teams
  - Site to support engagement & planning

