

Site: Mississauga

Location: Canada

Sector: Pharmaceuticals

Project Type: Energy Kaizen

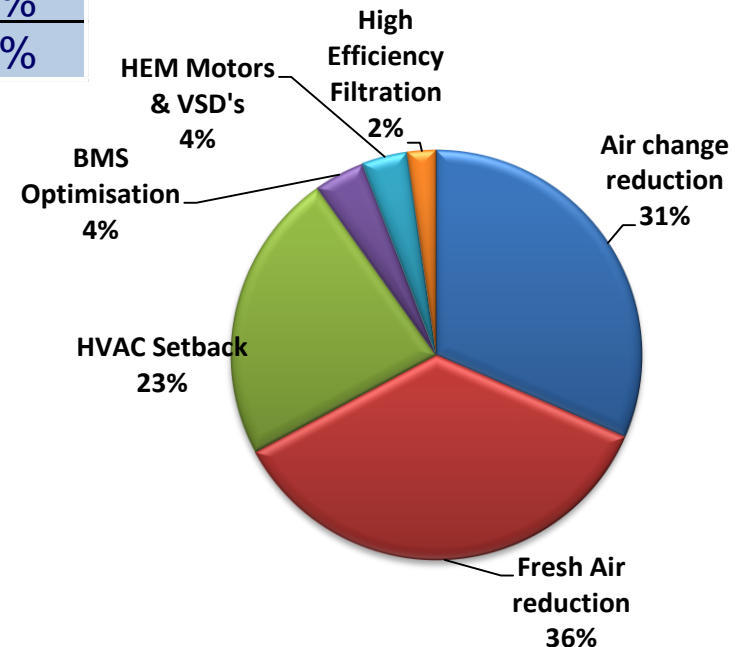
Date: January 2015

# Size of the HVAC Prize



Costs do not make an allowance for local Energy projects incentives

Description	kWh	\$	T. CO2
Air change reduction	1,878,439	228,920	315
Fresh Air reduction	2,119,614	96,500	385
HVAC Setback	1,371,447	132,213	236
BMS Optimisation	238,185	12,167	43
HEM Motors & VSD's	213,139	25,975	36
High Efficiency Filtration	133,462	16,265	22
<b>Totals</b>	<b>5,954,285</b>	<b>512,040</b>	<b>1,038</b>
% of HVAC Totals	26%	39%	26%
% of Site Totals	16%	19%	16%



# Size of the HVAC Prize



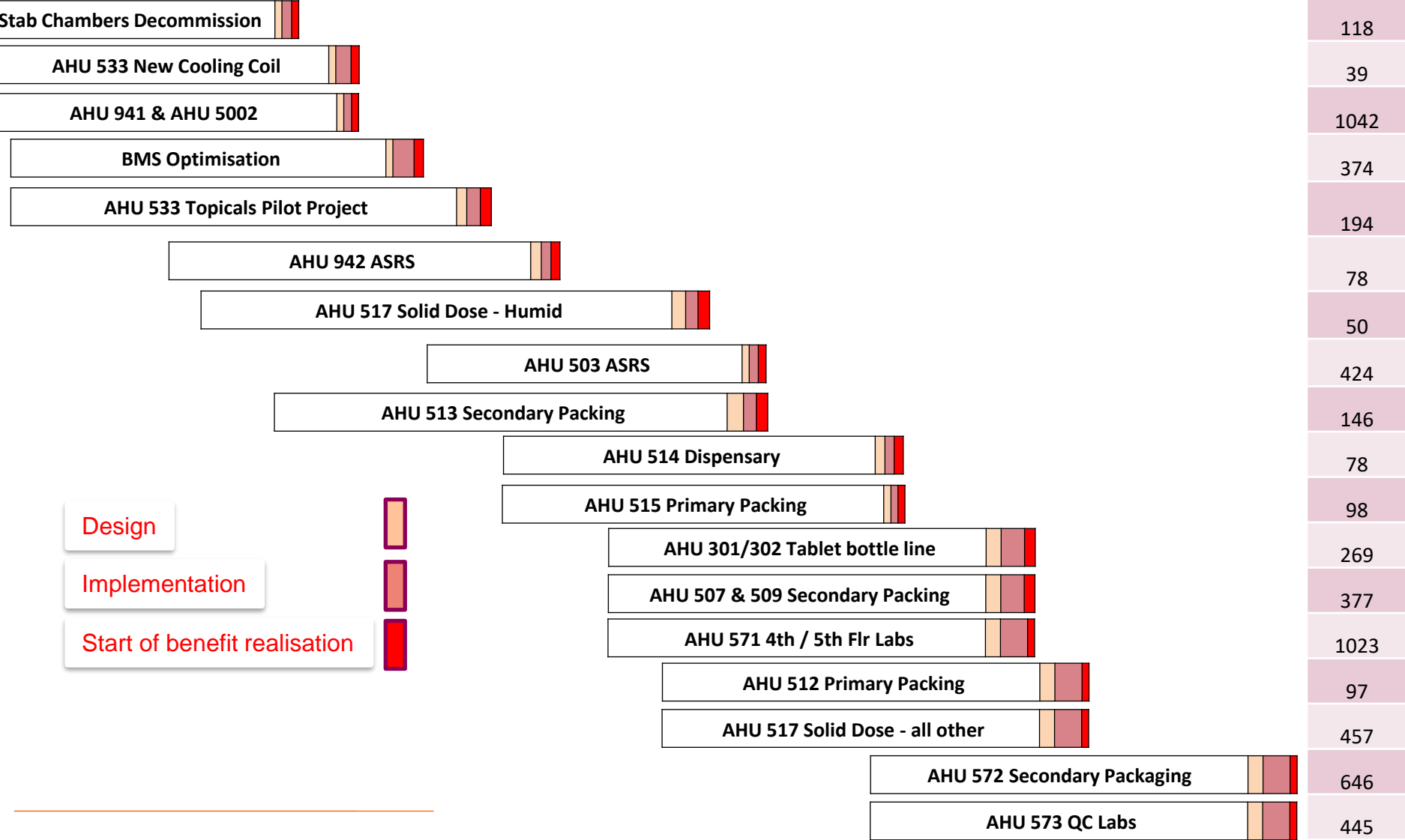
Costs do not make an allowance for local Energy projects incentives

Description	kWh	\$	T. CO2	Budget Cost \$	Simple Payback
Stability Chambers Decommission	118,260	15,109	20	10,000	0.7
AHU 533 New Cooling Coil	38,523	4,920	6	10,000	2.0
AHU 941 & AHU 5002 Aerosol Foams & Gaser Room	1,041,787	93,167	181	55,000	0.6
BMS Optimisation	374,425	19,407	67	16,000	0.8
AHU 533 Topicals Pilot Project	193,995	19,354	33	90,000	4.7
AHU 942 ASRS	78,226	9,660	13	35,000	3.6
AHU 517 Solid Dose - Humid	50,000	6,386	8	9,100	1.4
AHU 503 ASRS	424,227	52,798	71	40,000	0.8
AHU 513 Secondary Packing	146,231	18,152	25	40,000	2.2
AHU 514 Dispensary	78,147	9,645	13	65,000	6.7
AHU 515 Primary Packing	97,530	12,101	16	35,000	2.9
AHU 301/302 Tablet bottle line	269,026	30,316	46	35,000	1.2
AHU 507 & 509 Secondary Packing	376,664	46,388	63	80,000	1.7
AHU 571 4th & 5th Flr Labs	1,023,118	55,030	184	40,000	0.7
AHU 512 Primary Packing	96,725	12,136	16	55,000	4.5
AHU 517 Solid Dose - all other	457,108	51,535	78	100,000	1.9
AHU 572 Secondary Packaging	645,712	37,578	116	35,000	0.9
AHU 573 QC Labs	444,581	18,356	81	40,000	2.2
<b>Totals</b>	<b>5,954,285</b>	<b>512,040</b>	<b>1,038</b>	<b>790,100</b>	<b>1.5</b>
% of HVAC Totals	26%	39%	26%		
% of Site Totals	16%	19%	16%		

# Mississauga Kaizen – HVAC Projects Plan

Q1 15	Q2 15	Q3 15	Q4 15	Q1 16	Q2 16	Q3 16	Q4 16	Q1 17	Q2 17	Q3 17	Q4 17	Q1 18	Q2 18	Q3 18	Q4 18
-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

MW/hr



Design

Implementation

Start of benefit realisation

# Next Steps



## Working towards implementation

---

- Formalise the structured step by step approach for project implementation with all key stakeholders
  - Design, scope, costs & benefits for verification of project viability
  - Produce concept design, draft FRS & ECC for site team discussions
  - Early & active Key stakeholder engagement & “Approval in principle” of documentation, also discussions with Production team for access window requirements
  - Finalise: costs, benefits, scope, programme, resource & take to PIP
- Commence BMS Optimisation, set points, dead bands, control value repair/replacement
- Project Delivery
  - EECO2 / SE support HVAC programme as required
  - Measure all HVAC systems to establish baseline & priority projects
  - Engage to provide feasibility & developed design, validation support
  - Develop Energy Reduction & optimisation Strategy
  - Site to ensure engagement & planning