



gps renewables

waste management tech

bengaluru

**in-situ organic
waste processing**

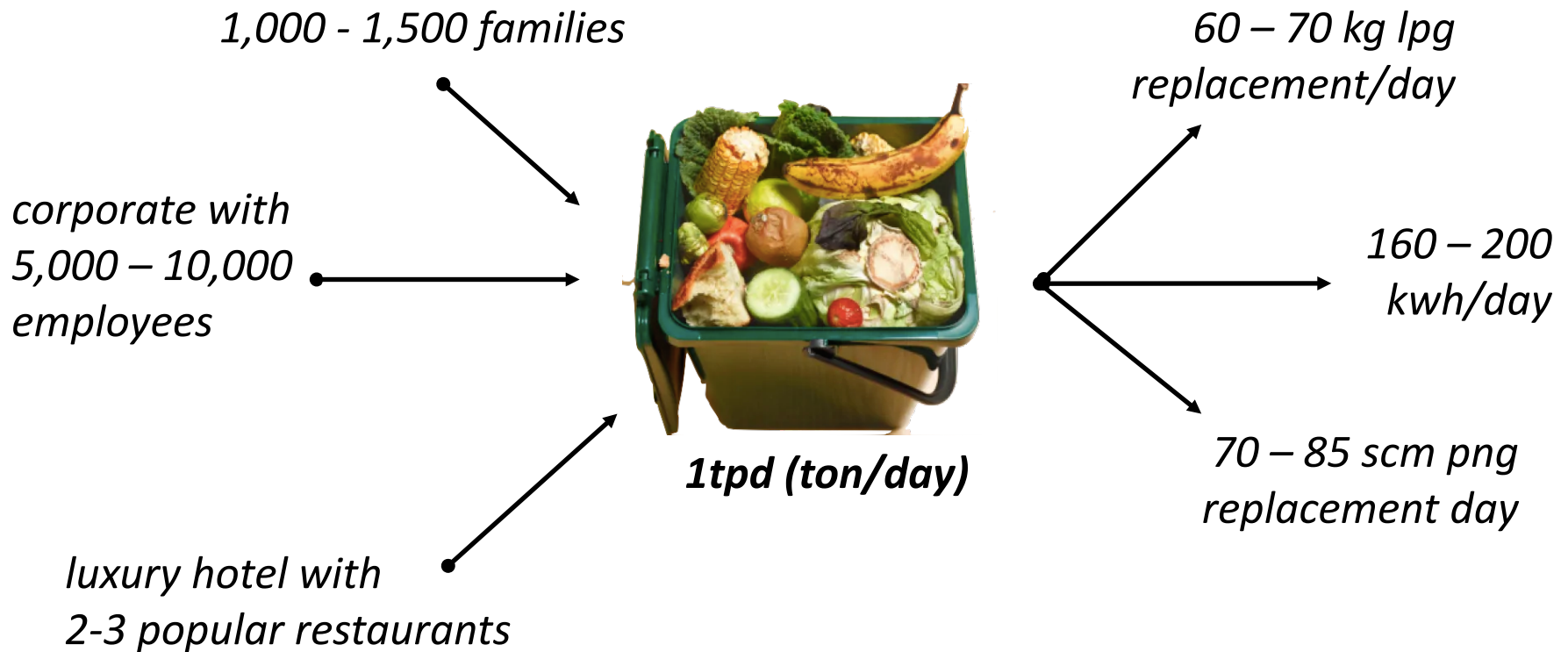


**captive & affordable
bioenergy at scale**

■ feedstock challenge



*“waste waste everywhere,
but not enough at source “*



■ space challenge



■ gps: quick overview [1/2]



- waste management technology firm based out of bengaluru | started by iim(b), iit & nit grads
- ~ 100 operational biogas plants across saarc region

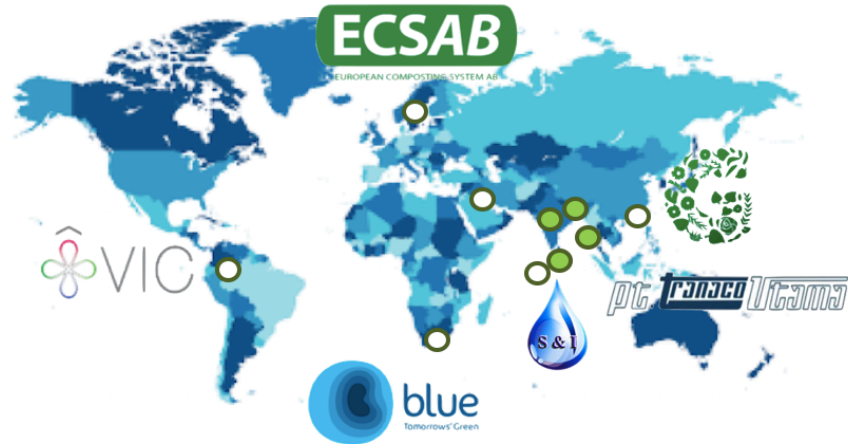


- > 40,000 tco₂ mitigated in fy19 | potential to mitigate **44 million tco₂ by 2024** according to wwf

■ gps: quick overview [2/2]



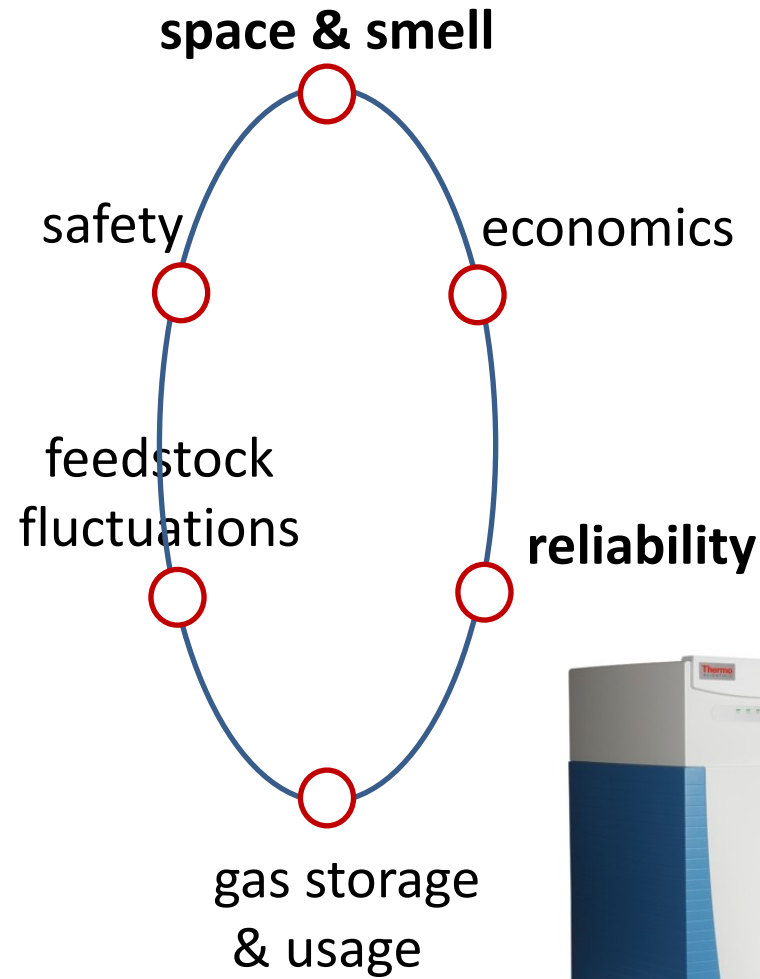
- growing international footprint



- recognition from the most respected technology / impact platforms



■ gps' solution suite: biourja



■ gps' solution suite: biogasbot [1/2]



■ gc replacement



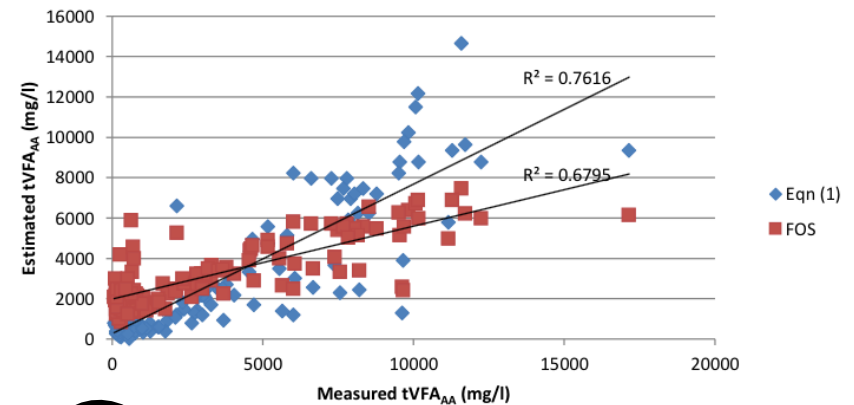
Patented biohealth checker

Titration data

Proprietary biohealth
parameter calculator

Regression

Results similar to GC



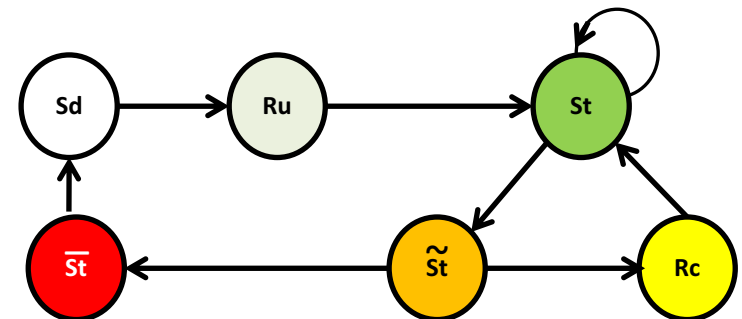
Sample total VFA estimate v/s actual data

$R^2: 0.76, p < 0.05$

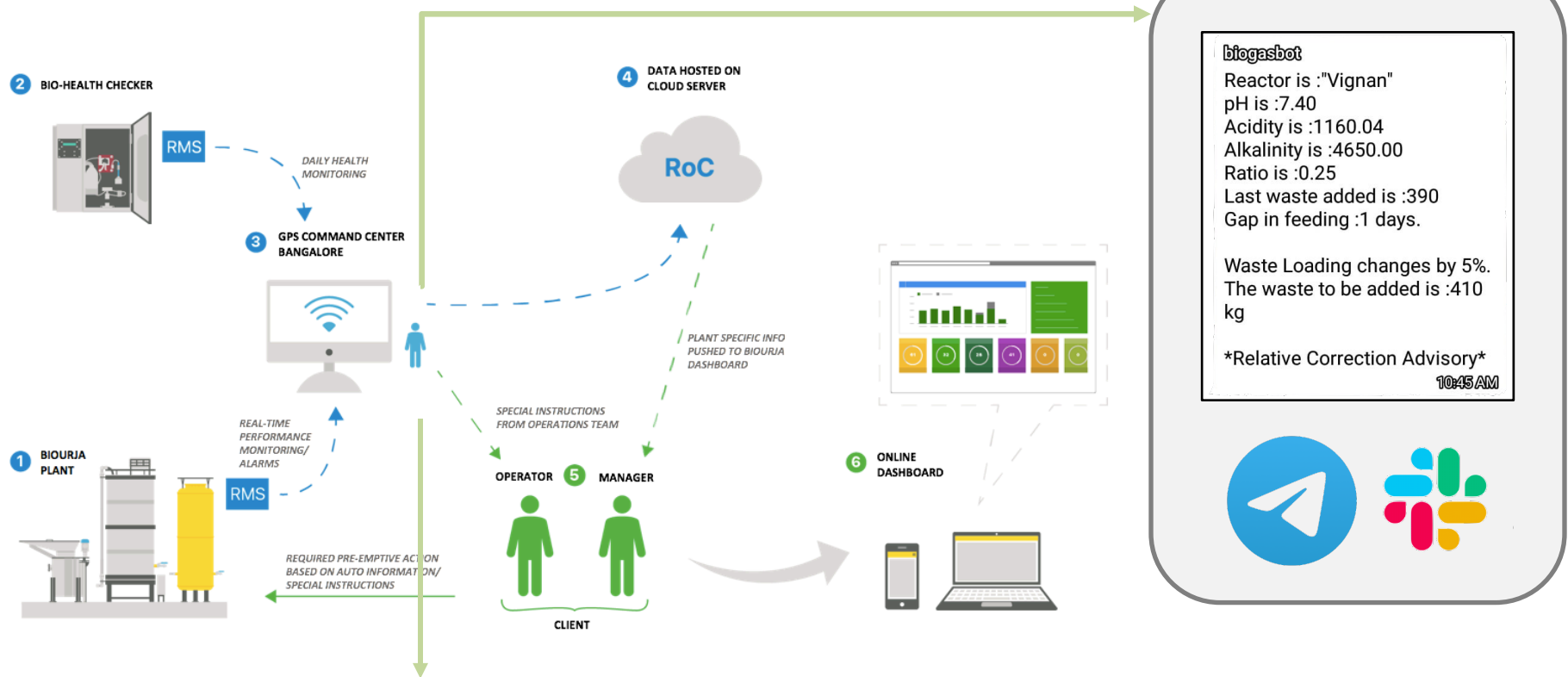
For healthy plants, $R^2 > 0.9$ and $p < 0.05$

■ human replacement

*original fsm model for plant biohealth
| works on local (individual plant) &
global (aggregate) data*

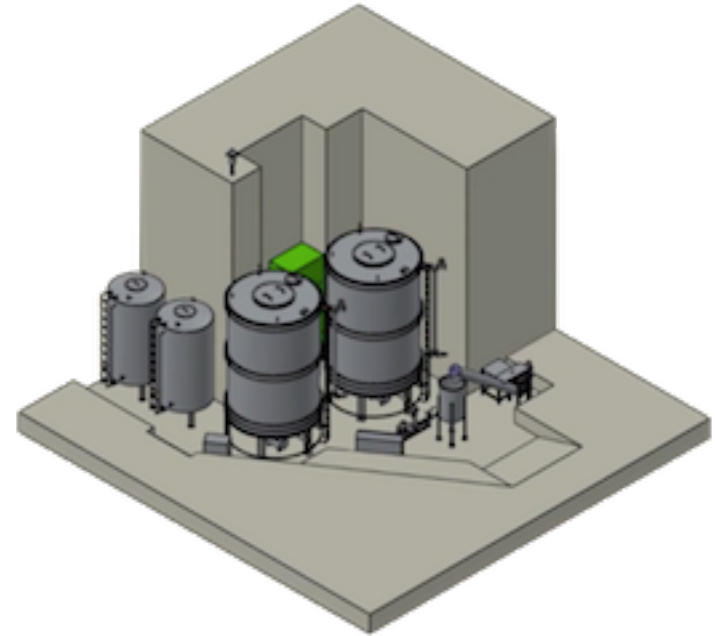


■ gps' solution suite: biogasbot [2/2]



gps' expert system,
*which mimics a biogas expert
for decision making*

■ biourja gallery [1/3]



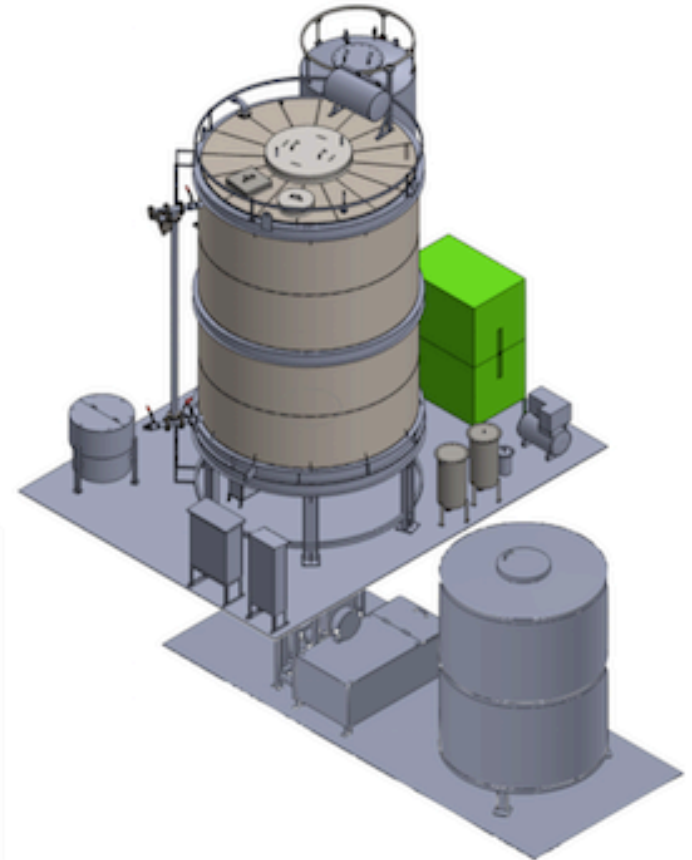
2 tpd biourja setup @ infosys, bangalore

clockwise from top right:

- 1) view from outside of shed housing the plant*
- 2) plant 3D layout*
- 3) view from inside of shed*



■ biourja gallery [2/3]



*distributed layout across
2 floors at itc maratha*

■ biourja gallery [3/3]



taj palace

iim bangalore



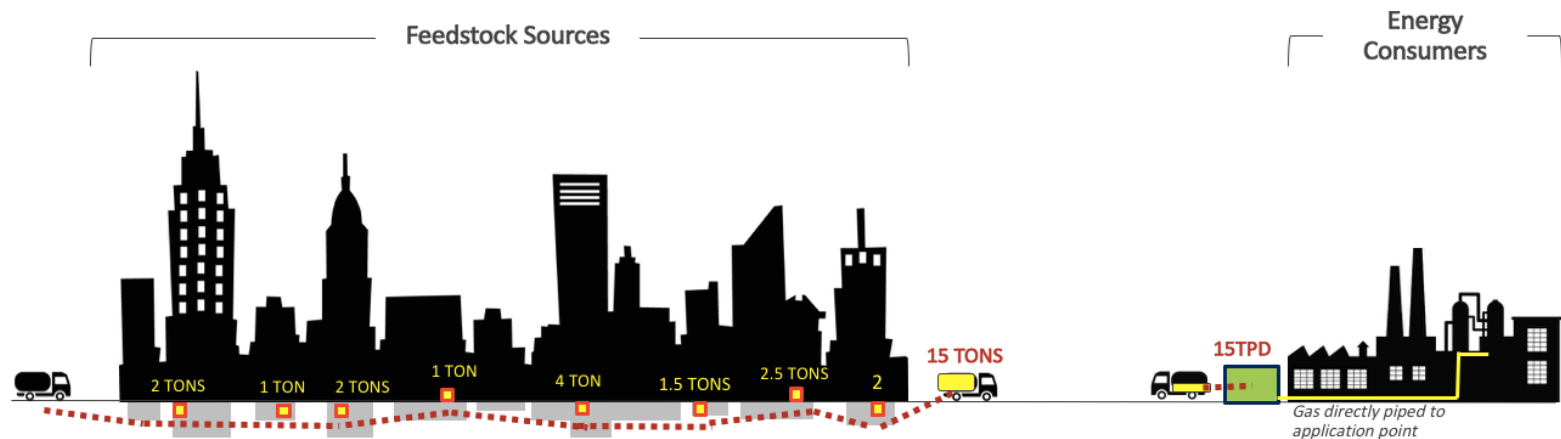
■ gps' solution suite: dispred



help bulk waste generators dispose off organic waste in the most cost & space effective way



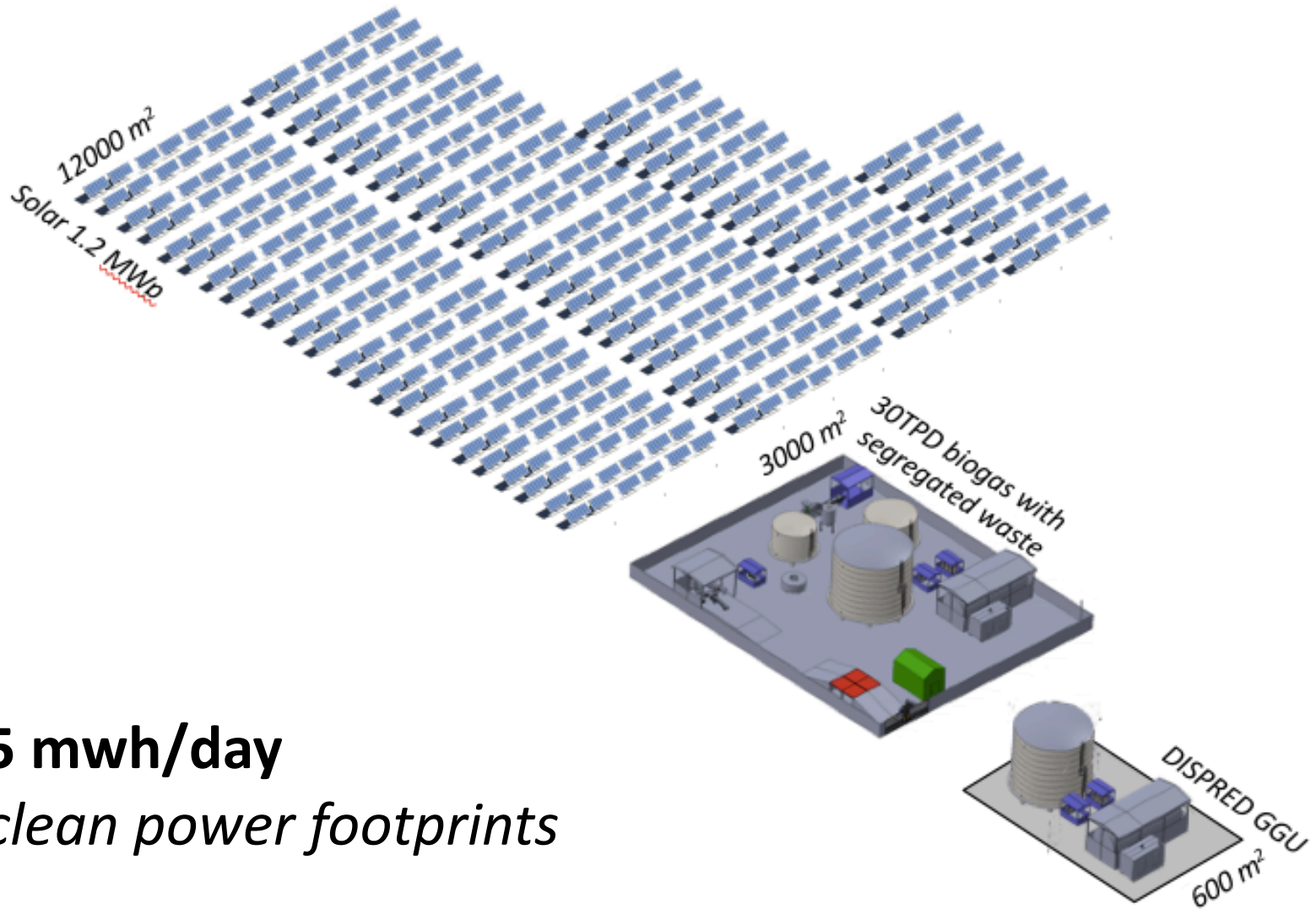
generate captive energy where it makes most financial sense



■ gps' first dispred project



■ dispred possibilities



5 mwh/day
clean power footprints

■ what “smart biogas” can do, that others can't

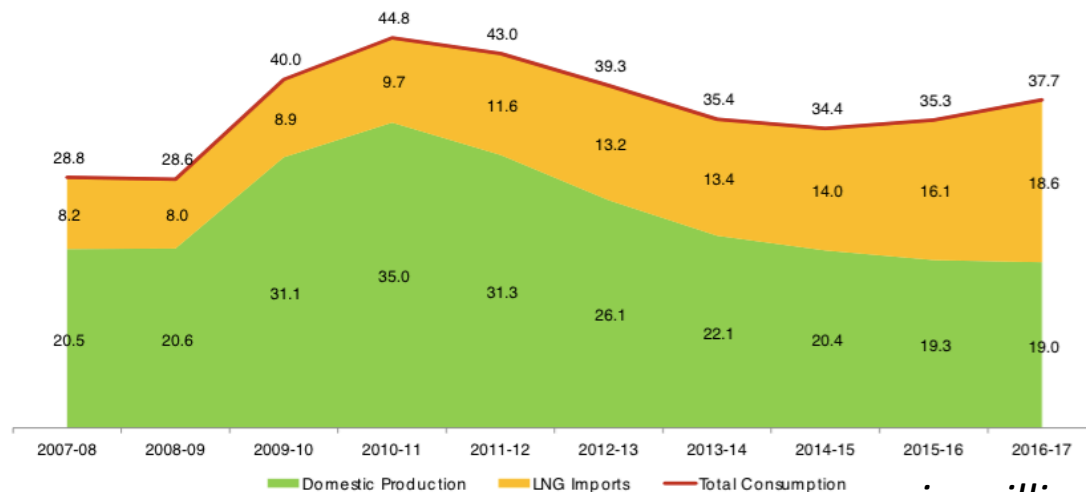
1. captive clean power @ < rs 8 / kwh for consumers falling below *open access* thresholds
 - upto 5 mwh in 30 – 600 m² footprint
 - target 200+ consumers in ncr from ncr's urban waste alone | other feedstocks such as cow manure & agro residues can take it up 1000+
2. captive thermal energy upto 2000 kg of lpg_{eq} per day
 - similar target numbers as above

biogas in the **post-covid** world

■ at the national level



- **health problem:**
 - increased focus on public health
 - urban wet waste problem -> another pandemic
 - thus, swm rules & sbm to stay in govt's focus
 - stubble burning impact rising with each year
- ***atma nirbharta* wrt oil**
 - india imports ~ 50% of its oil requirements



in million tonnes

■ at the national level

- ***atma nirbharta* wrt oil**
 - answer lies in biocng -> basis of *satat*



Source: iocl

■ at an international level



- usd **500b+** market @ inflexion point
- < 1% decentralized
- **“polluter pays”** theme getting prominence -> increased focus on **epr** & similar themes
- decentralized cost-effective solutions with smart features such as remote monitoring expected to play a big role

WASTE
UK changes its waste strategy for circular economy with Brexit
Maximise the value of resource use, and minimise adverse environmental impacts, aims new waste strategy of UK

Trash Fight: The long voyage of New York's unwanted garbage barge

By DICK SHERIDAN | NEW YORK DAILY NEWS | AUG 14, 2017 | 6:00 AM

CHENNAI
Making firms clean up their trash

THOOTHUKUDI, DECEMBER 29, 2018 00:38 IST

Hariprasad Radhakrishnan

GULF NEWS
UAE

Crime Education **Environment** Government Health Transport Science Weather
Pay as you throw waste fee for all Dubai buildings soon

Dubai Municipality to outsource waste collection service to private firms after announcing tipping fee

USA TODAY

NEWS

SPORTS

LIFE

MONEY

TECH

TRAVEL

OPINION

30°

CROSSWORDS

MORE ▾



California city approves 'landmark' plan to curb food-related waste that includes 25-cent fee on disposable cups