



MitigationMomentum

Present conditions of Small Scale Renewable Energy IPP in Sumatera Utara province

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Methodology

- Interview with 12 IPPs
(Hydro:6, Biomass: 3, Biogas: 1, Solar/wind: 2)
- Interview with 3 local contractors
- Discussions with RE-related Government Officers
(Province and Regency level)
- Discussions with local consultants and academics
- Reviewing local statistic reports and local news
- Reviewing local regulation, RAD-GRK, Planning documents
- Reviewing RE-related research papers and presentation materials



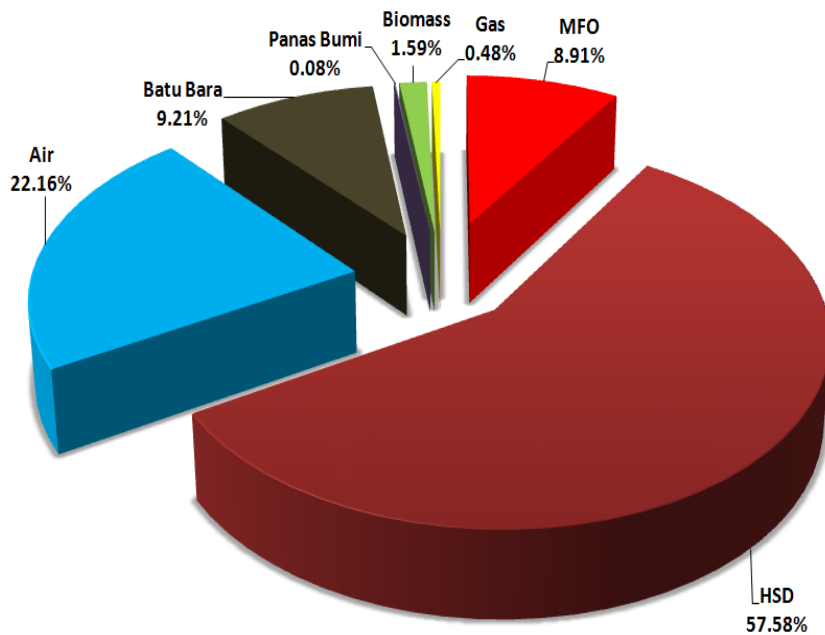
Electricity in Sumatera Utara

- Customers (Households) : 3,222,604
 - PLN : 2,829,446
 - Non PLN : 78,873
- Ratio Electrification : 90.25%
 - PLN : 87.80%
 - Non PLN : 2.45%
- Deficit Power (Ave.) : 247 MW

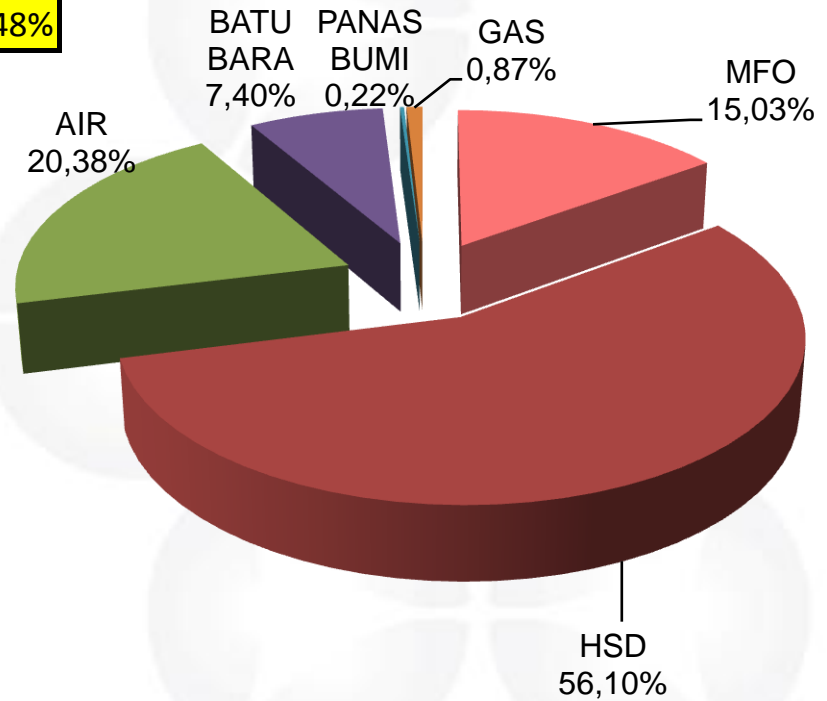
Fuel Mixed Sub-sistem Sumbagut (Sept 2014)

Source: PLN

Energi Primer	Tahun 2014	%
MFO	82,724.22	8.91%
HSD	534,818.38	57.58%
Air	205,856.05	22.16%
Batu Bara	85,503.74	9.21%
Panas Bumi	712.37	0.08%
Biomass	14,788.60	1.59%
Gas	4,442.75	0.48%



2014

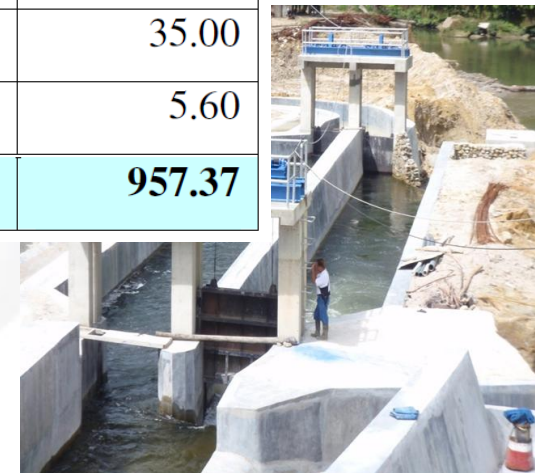


2013

Present Conditions small scale Hydro in Sumatera Utara



No	Status	2012		September 2014	
		Unit	Capacity (MW)	Unit	Capacity (MW)
1	Operation	3	20.00	4	28.30
2	Construction	9	78.20	9	8.370
3	PPA (Not yet FC)	12	112.00	16	158.70
4	Processing PPA	16	125.10	20	147.30
5	Proposal (Submitted)	55	344.30	69	498.77
6	Proposal (Rejected)	-	-	4	35.00
7	Resign	-	-	1	5.60
Total		95	679.60	123	957.37





Brief Summaries small scale hydro

- Only 4 IPPs have been operating (2 Pioneers)
- All of them has experienced on over design budget
- Typical problems:
 1. Long process of permitting
 2. Financial support
 3. Land acquisition
 4. Lack technical capability
- Developers want to be treated as a green technology partner for government



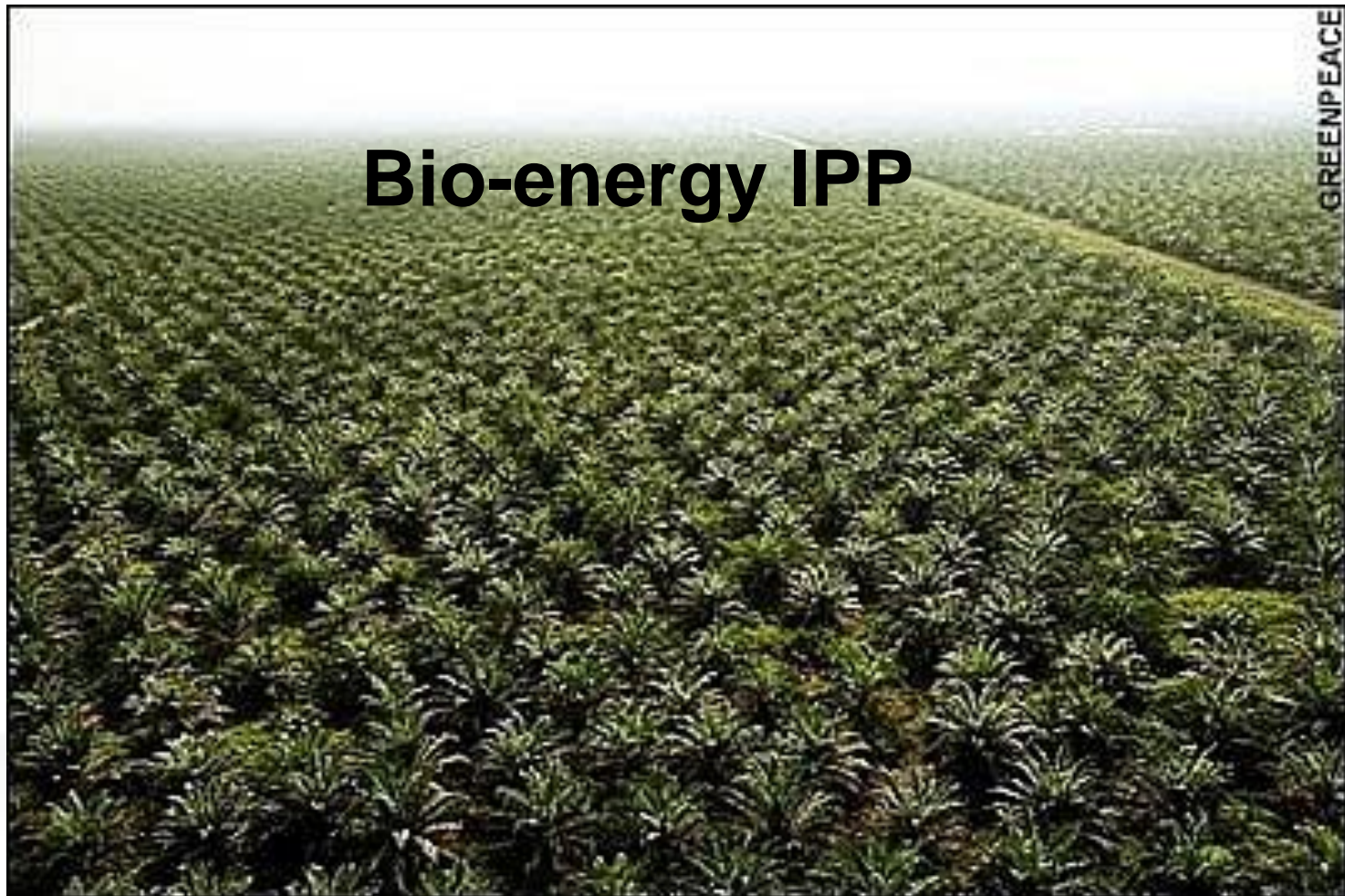
Technical Barriers

- Lack accuracy of data
- Preparation pre and full FS and DED need to be improved
- Access to relevant expertise are limited.
- Cost estimation and time implementation are bad
- It is realized lack of design and project preparation skills.
- Actual output and designs do not agree well



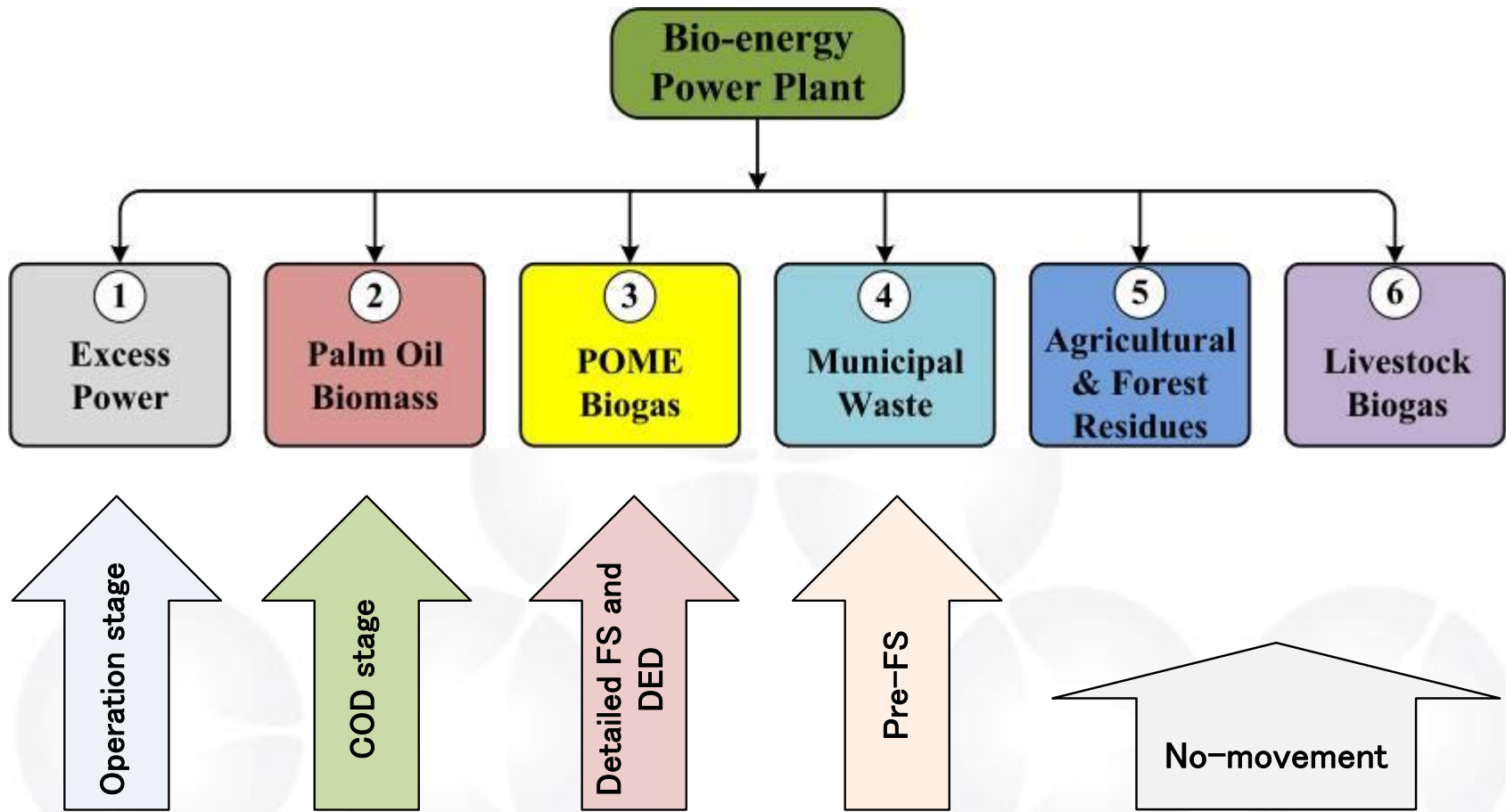
PLN related

- The main complaint from IPPs regarding PLN is grid availability.
- Grid connection cost is also a problem
- Process need to be shorted and should be finish in province level



Source: Greenpeace

Present conditions Bio-energy IPP





Bio-energy IPP have signed PPA

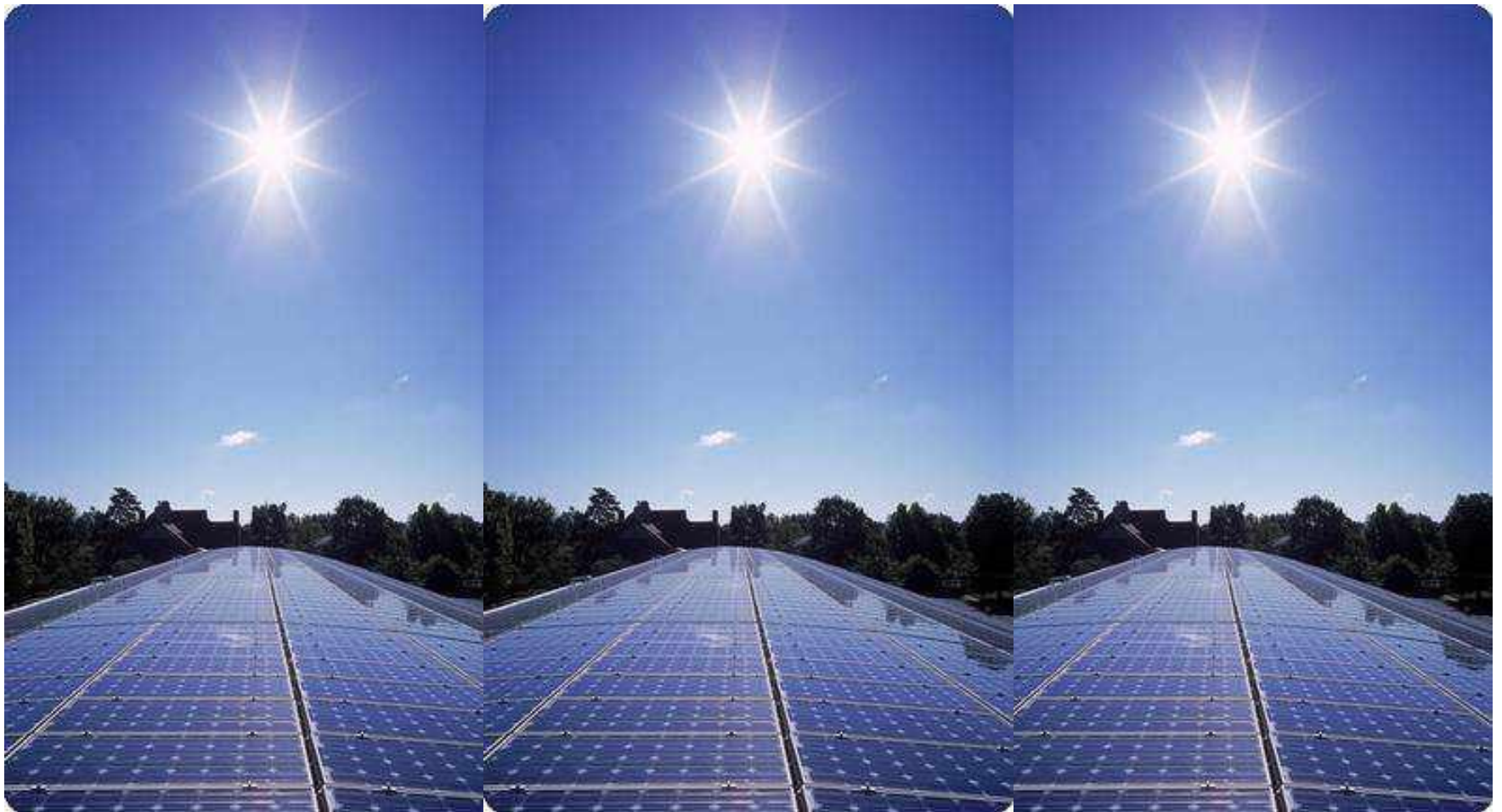
No	IPP Name	Capacity (MW)	Regency	COD
1	PTPN III Rambutan	2.0	Serdang Bedagai	2013
2	PTPN III Sei Mangkei	3.5	Simalungun	2013
3	PT Nubika Jaya	6.0	Labuhan Batu Selatan	2013
4	PT Victorindo Alam Lestari	9.0	Padang Lawas	2013
5	PT Harkat Sejahtera	1.0	Simalungun	2013
6	PT Harkat Sejahtera	10.0	Simalungun	2013
7	PT Canang Indah	3.0	Medan	2014
8	PT United Kingdom Indonesia Plantations	2.2	Langkat	2015
9	PT Sei Dapdap	2.4	Asahan	2015
10	PT Global Green Energy Lestary	6.0	Langkat	2015
11	PT Anugrah Langkat Makmur	0.2	Langkat	2015
12	PT Lingga Tiga Sawit Palm Oil Mill	0.5	Labuhan Batu	2015
13	PT Perkebunan Milano	2.0	Labuhan Batu	2015
Total		47.8		



Bio-energy IPP:

- Palm Oil Plantation owned by government is expected as pioneer.
- Strong commitment of the authority is not there yet
- A success story is extremely needed
- Some cases, financial is not a problem
- Technical and construction capacity is low
- Strong EPC is needed
- Some IPP are traumatic dealing with PLN (not even tried)

Solar Energy IPP



Source: ecn.nl



General Summaries

- Developers have been waiting for the new solar energy FIT.
- PLN, on the other hand, feels the new FIT is too expensive.
- No supported loan from Bank is detected
- The developers tend to joint with international partner (Generally producer of PV module).
- Preparation of pre and full FS and DED need to be supported



Barriers

- There is no guidance yet in Bank or Financial institution for providing fund to Solar power plant project. In other words, solar power plant project is still unknown.
- Developers estimate total cost will be around USD 2.5M/MW (Expensive)
- Resource/site identification, data collections, pre and full FS are carried out by IPP. In other words, there is no consultant can be hired.
- In the solar energy case, up to now, there no significant resistant is found by developers. Government and local community fully support solar energy project.



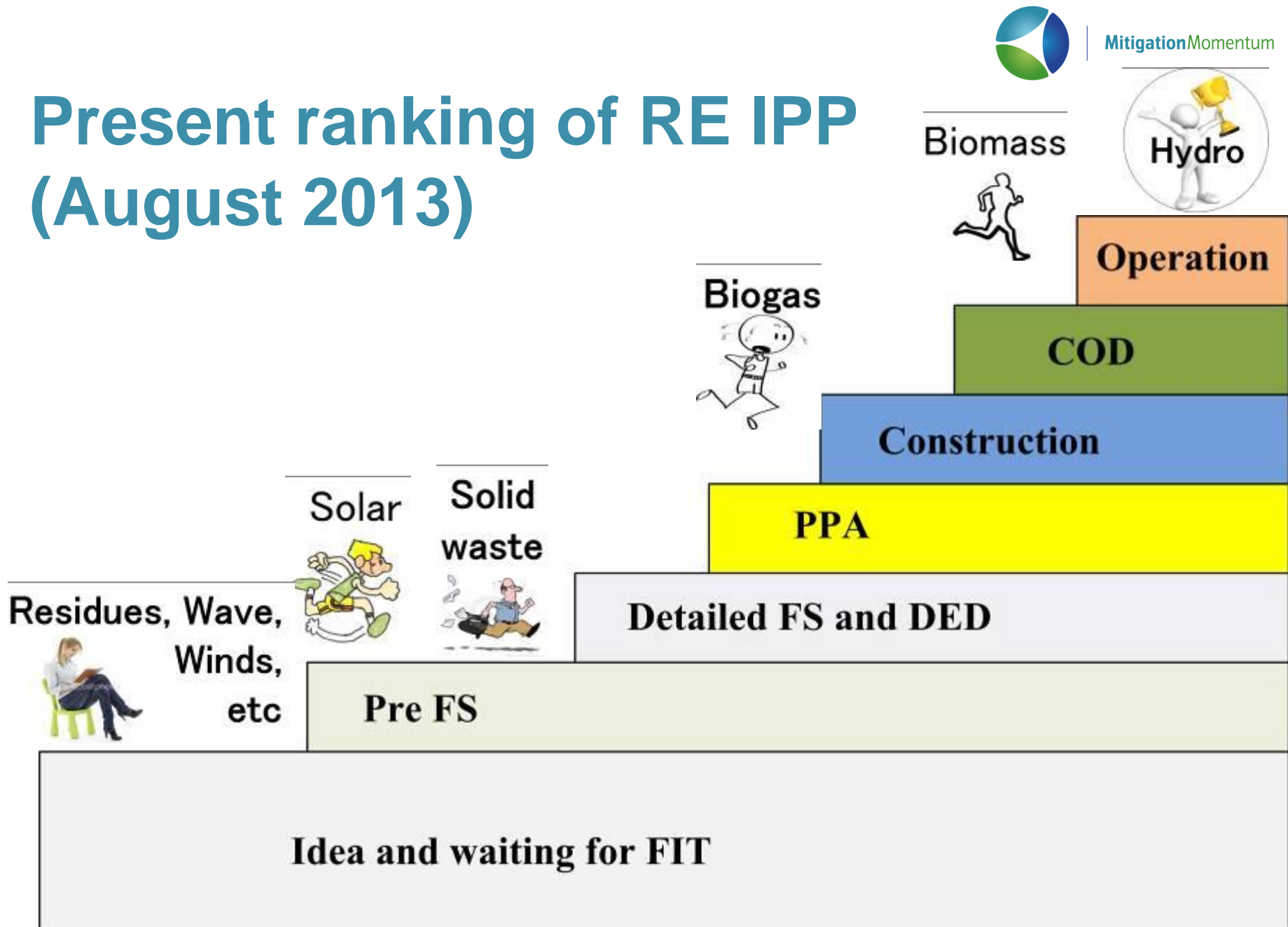
Barriers

General experiences when dealing with PLN:

1. PLN seems do not want to purchase solar electricity in the on grid areas.
2. In the RE business PLN is too centralized. It should be provided, a desk for RE in the province level.
3. In the on grid area, it is stated that PLN grids do not support interconnection with PV.



Present ranking of RE IPP (August 2013)





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Thank you!

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ECOFYS

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