



# **RISK ANALYSIS -PEL**

Capitalist Crew Represent

# Our brains

Meet our awesome members



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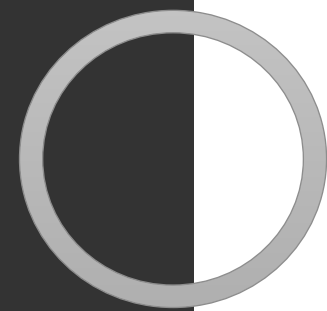
Double Degree in Finance and  
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# Recommendation

We recommend CBI approval for PEL's request Working Capital Limits due to its highlights in stable industry, operational resilience and financial flexibility.



# Industry Risk



## Regulatory Risk

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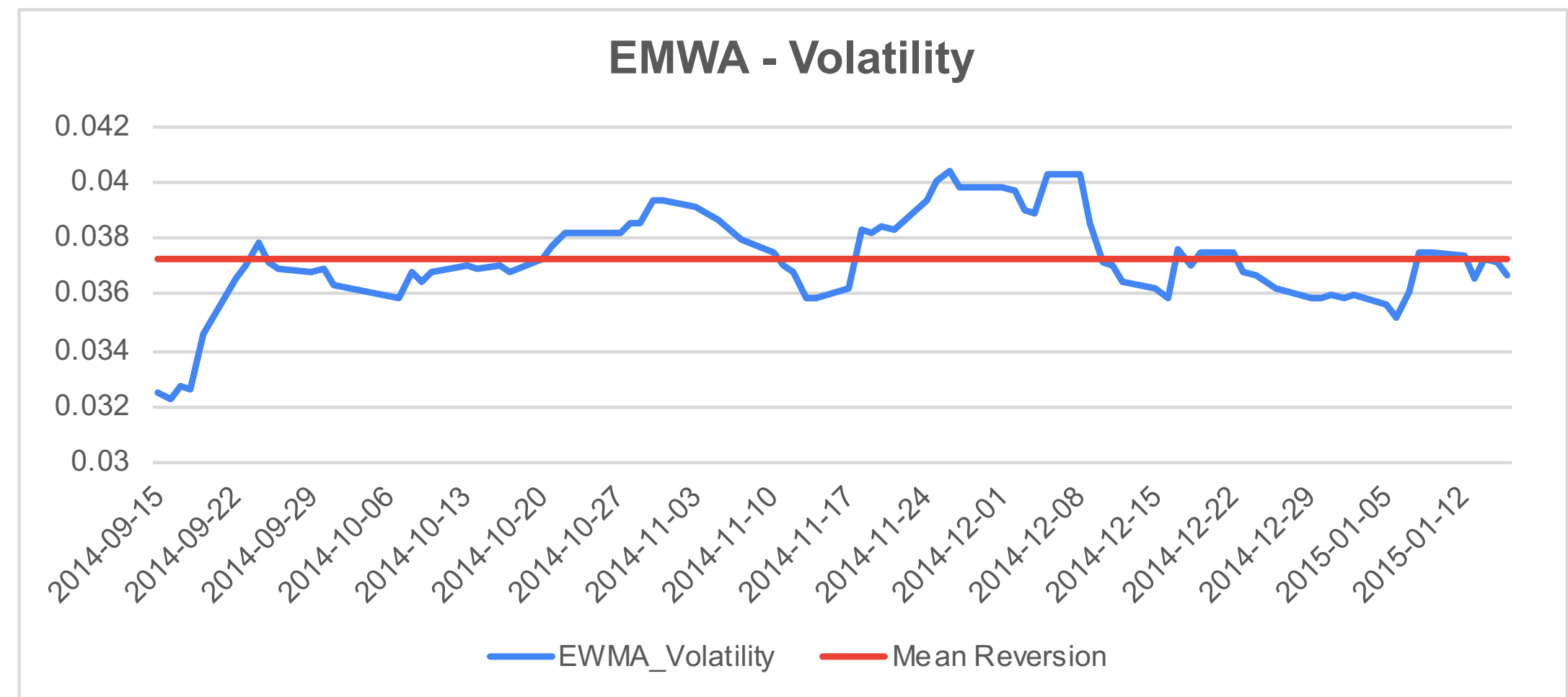
- ◎ ***Support*** from Government and Engineering Society
- ◎ **Limited Managerial Remuneration**
- ◎ **Stricken Regulatory Compliance in Expansion**
- ◎ **2014 - Supreme Court *lift ban on iron ore* to restructure infrastructure industry; trend in regulatory relaxation**

# Industry Risk

## Market Risk

- ◎ EMWA Volatility remains tightly bound to mean
- ◎ VaR Analysis suggests 95% confidence 1-day loss will not exceed ~55 million, minimal with respect to reserves (See Exhibit 1.1)
- ◎ Consistent Market Confidence → *Ease to raise capital from Market*

Graph 1.1 Exponential Moving Weighted Average Approach to Stock Volatility



**Note:** Exhibit 1.1 shows log daily return distribution and Value at Risk Calculation using Normal distribution approach and historical approach in stock holders perspectives

# Business Risk

## Customer Concentration Risk

- Government commitment to decrease dependency on foreign defence equipment and increase local purchase in defence product
- More than 50% revenue generated from five major customers
- Concentrated on coal mining and infrastructure

## Hazardous Risk

- FY 2012/13, fire accident incurred ₹10.8 million damages and 30 million lost of detonator production
- Replacement of azide-lead with NHN

*Graph 2.1 Poisson Probability Risk Model*

Number of occurrence	Probability	Risk-adjusted Loss
1	0.1238	1337468.76
2	0.00884	191066.97
3	0.000421	13647.64

*Note: Exhibit 2.1 shows Poisson Distribution assumption for loss severity and calculation formula*

# Business Risk

## Obsolescence Risk

- Decreased operational life cycle due to technological obsolescence
- High obsolescence risk with Joint Venture with Kalyani Group for the purpose of manufacturing domestically produced defence equipment

## Risk Arising from group company

- PWPL supply raw material for production of detonators, providing protection in price volatility risk and raw material scarcity risk
- Wrote off multiple overseas and mushroom business investment amounts
- Require close monitoring of group companies investments

# Financial Risk

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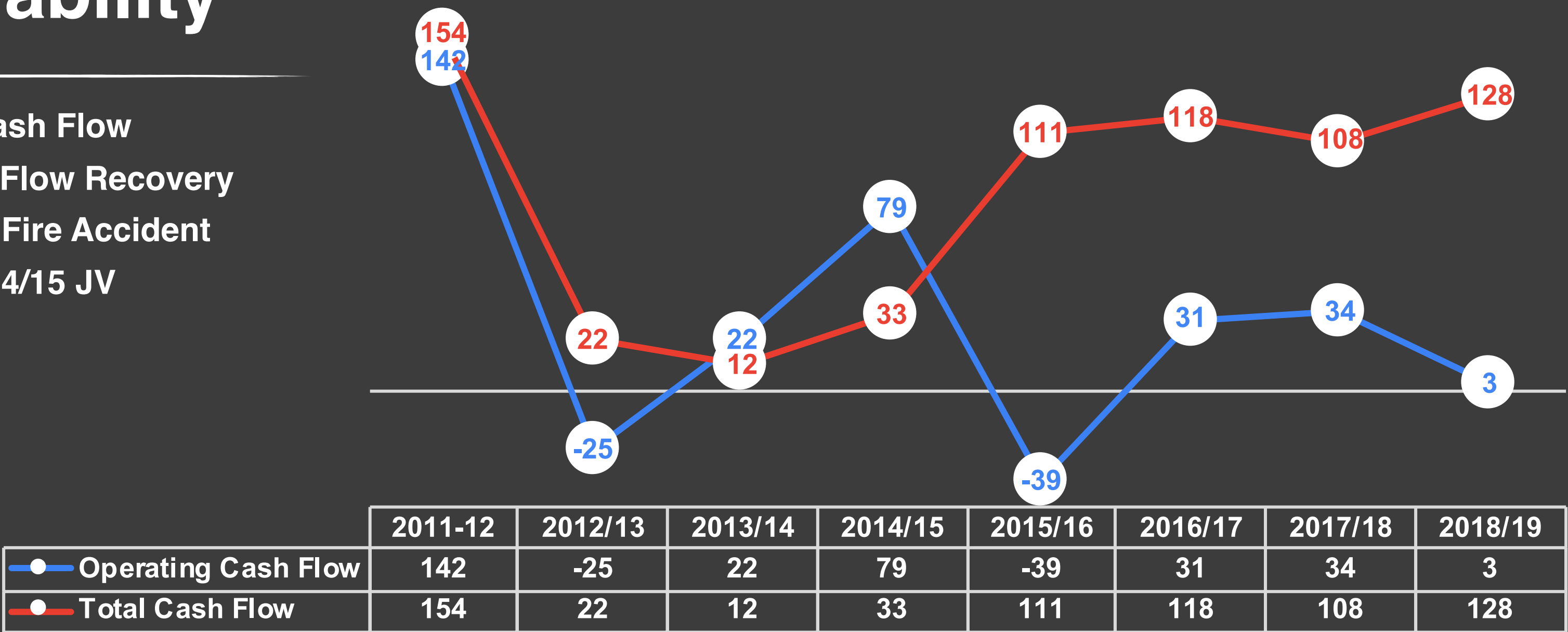
- Financial Sustainability
- Financial Flexibility
- Financial Solvency
- Foreign Ex. Rate



# Financial Sustainability

- Positive Total Cash Flow
- Operating Cash Flow Recovery
  - Pass: FY12/13 Fire Accident
  - Projected: FY14/15 JV

## CASH FLOW ANALYSIS



*Note: Exhibit 3.1 shows operating ,investing, financing cash flow calculations*

# Financial Sustainability

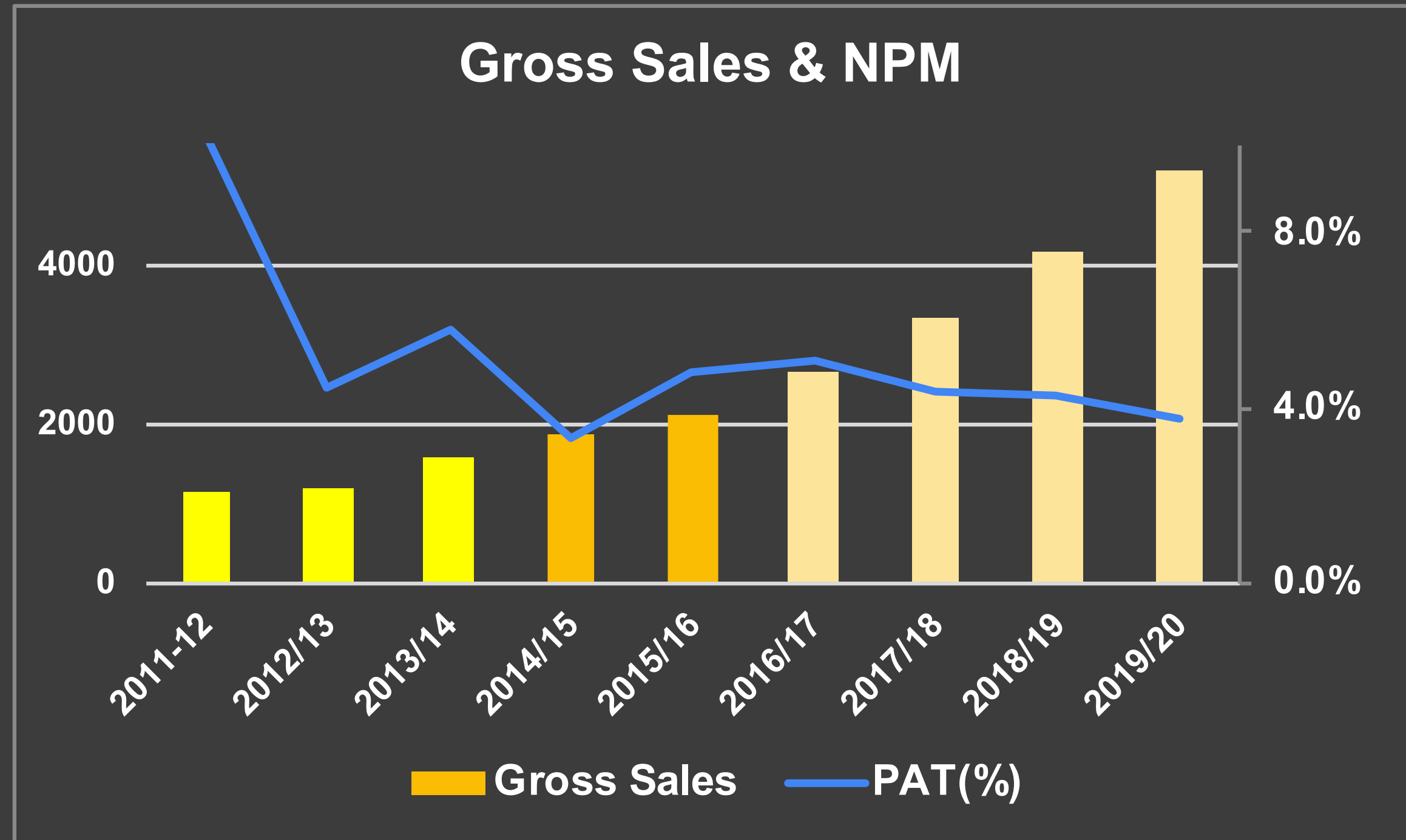
- ◎ Negative Cash Collection Period
- ◎ Sustainable/Competitive Cost Structure

	FY12/13	FY13/14	FY14/15 (Projected)	FY15/16 (Projected)
Inventory Turnover	8.78	9.10	9.52	9.35
Inventory period	41.55	40.13	38.33	39.02
Receivable Turnover	7.17	6.96	5.66	4.62
Average Collection period	50.89	52.38	64.52	79.01
Operating Period	92.44	92.51	102.84	118.03
Account Payble Turnover	2.07	2.25	2.32	2.33
Account Payble Period	176.18	162.05	157.32	156.69
Cash Conversion Cycle	<b>-83.74</b>	<b>-69.54</b>	<b>-54.48</b>	<b>-38.66</b>

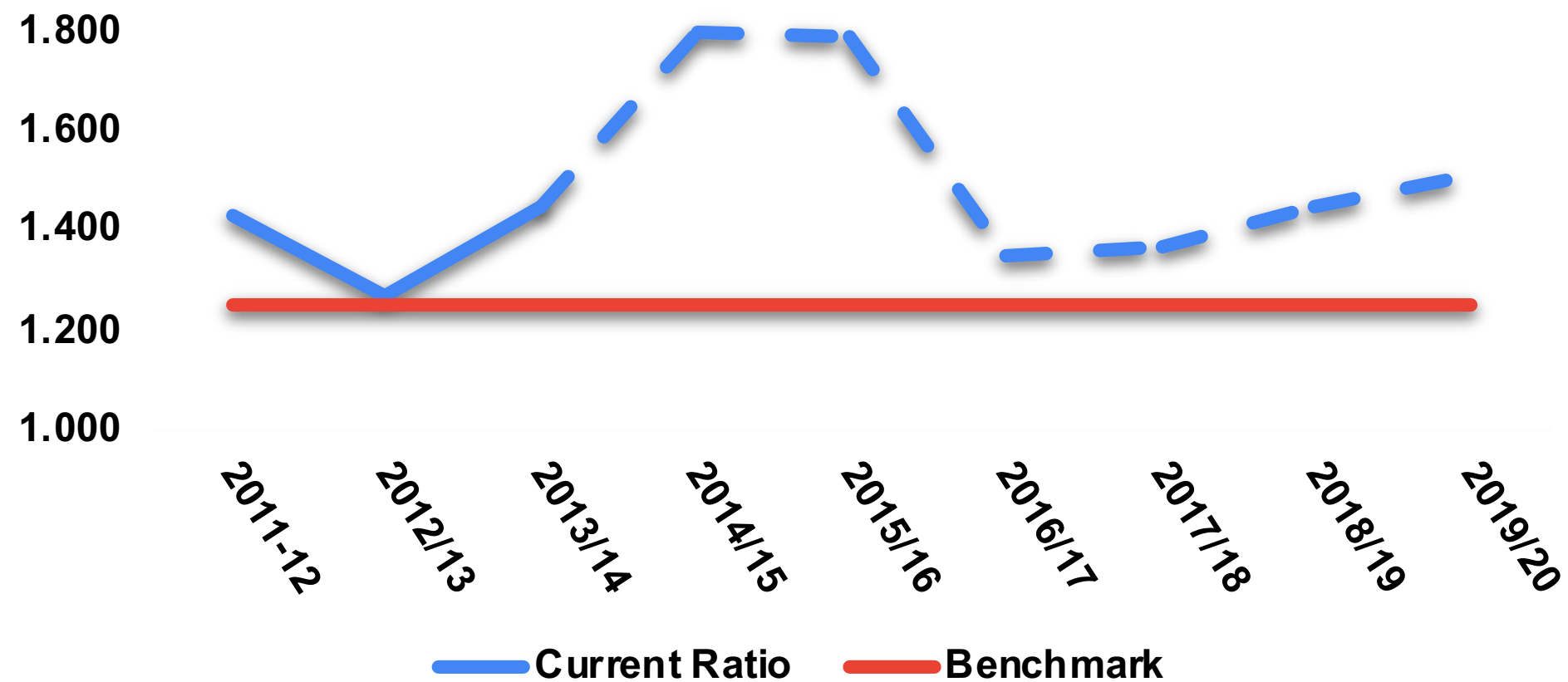
*Note: Exhibit 3.2 shows calculation for Turnovers and periods using average method*

# Financial Sustainability

- Consistent Growth in Net Sales
- NPM Drop #1 - FY12/13 Fire Accident
- NPM Drop #2 - FY14/15 Joint Venture
- NPM Recovery Projection



*Note: Exhibit 3.3 shows Net Sales and NPM calculations in audited pass 3 years and projected years*



# Financial Flexibility

- Met CBI Current Ratio Benchmark
- Competitive current ratio in chemicals industry

Graph 3.1 Peer Compare (₹ Million) - Current Ratio

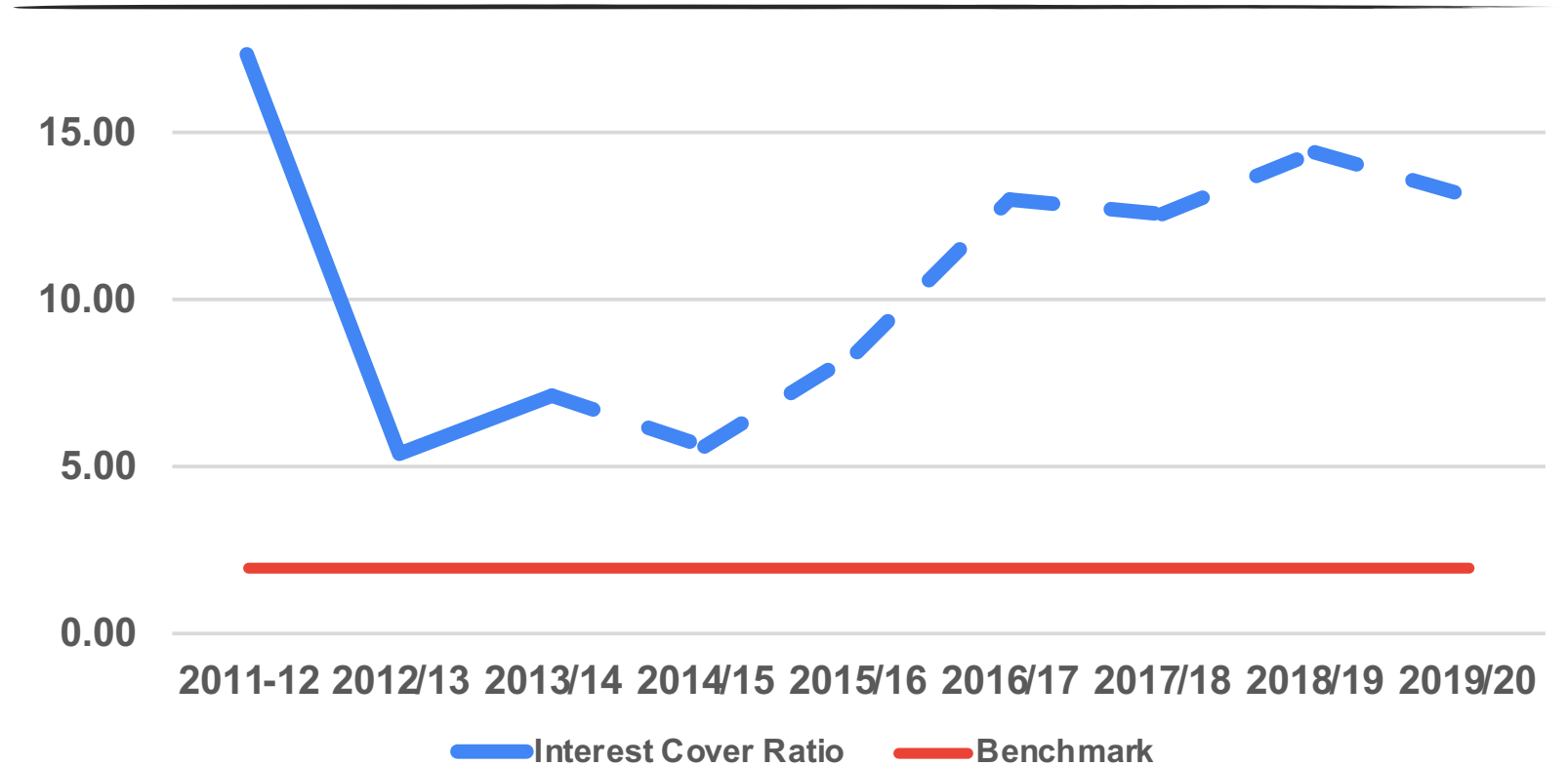
As of March 31,2014	PEL	Keltech Energies Ltd.	Solar Industries India Ltd
Current Ratio	1.45	0.9	1.15

**Note:** Exhibit 3.4 shows Calculation for Current Ratios for pass audited years and projected years

# Financial Solvency

- Interest Cover Rate(ICR)
- Contingent Liability
- Leverage: TOL/TNW & adj. TOL/TNW

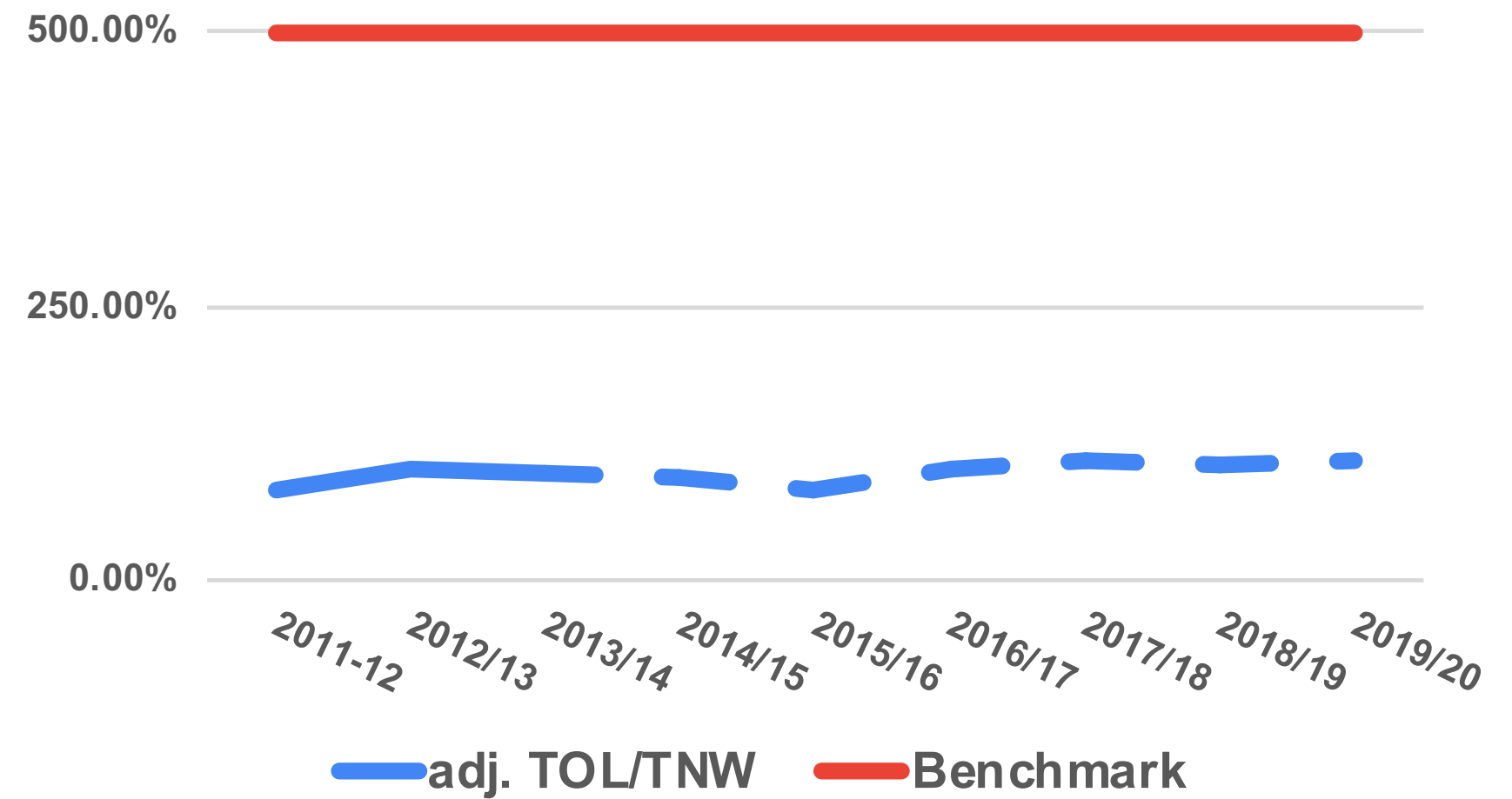
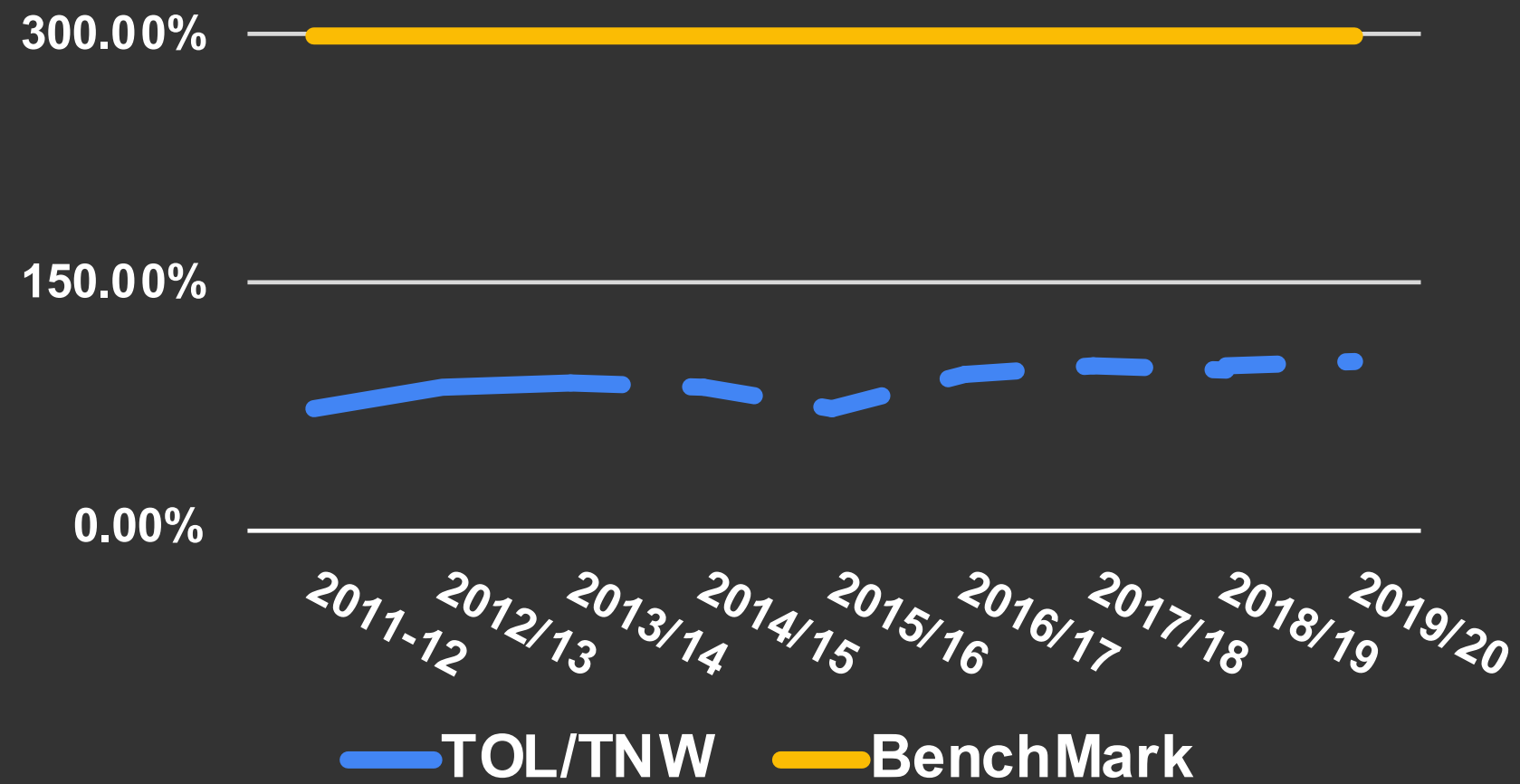
## Interest Cover Rate



## Contingent Liability

Graph 3.2 Contingent Liability Benchmark (₹ Million)

	2011/12	2012/13	2013/14
[+] Capital	81	81	84
[+] Reserves and Surplus	374	403	489
Net Worth	455	484	573
Contingent Liabilities (BGs)	250	290	373
<b>Surplus</b>	<b>205</b>	<b>194</b>	<b>200</b>



Graph 3.2 Peer Compare (₹ Million) - TNW

As of March 31,2014	PEL	Keltech Energies Ltd.	Solar Industries India Ltd
TNW	572	340	4556

## Leverage

- ◎ **Meet CBI Benchmarks**
- ◎ **Relative competitive TNW in the industry**
- ◎ **Preferable criteria for Credit lending indicating lower credit risk for CBI**

# Financial Risk - Foreign Exchange Rate

- 2-7% of Net Sales exposure
- **Strong** Indian Economy in general despite small slow down in mining and infrastructure sector
- Not Essential Risk Driver

# Management & Governance

## Management Quality & Corporate Governance

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- **Commitment** from Gupta's family, owing 44% Equity
- 5 out of 10 BoDs are **independent** professionals with **deep experience in the field**
- Gupta is 70 years old, potential internal tension for succession planning



# Credit 5 C's

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Character	Capacity	Capital	Collateral	Conditions
<ul style="list-style-type: none"><li>• “A- Stable” for fund-based credit exposure</li><li>• “A2+ Stable” for non-fund-based credit exposure (BGs), according to ICRA</li></ul>	<ul style="list-style-type: none"><li>• Interest Cover Ratio and TOL/TNW</li><li>• Clearly able to repay loans</li></ul>	<ul style="list-style-type: none"><li>• Consistently increasing net worth</li></ul>	<ul style="list-style-type: none"><li>• Pari-passu charge on current assets</li><li>• PEL's fixed assets</li></ul>	<ul style="list-style-type: none"><li>• Forecasted to continue growing</li></ul>

“ We recommend CBI approval for PEL’s request Working Capital Limits due to its highlights in *stable industry*, *operational resilience* and *financial flexibility*.”

- *Capitalist Crew*

# Exhibit 1.1 Log Daily Return

$$\ln(P_1/P_0)$$

Example:

$P_1$  = Closing price 7/4/2014 = 164.05,  $P_0$  = Closing Price 7/3/2014 = 160

$$\text{LDR} = \ln(164.05/160) = 0.02499 = 2.50\%$$

$$\text{Mean LDR} = \sum (i = 7/1/2014 \text{ to } 1/16/2015) \ln(P_i/P_{i-1}) = 0.0052 = 0.52\%$$

$$\text{Std. Dev. LDR} = \sum (i = 7/1/2014 \text{ to } 1/16/2015) \text{SQRT}((P_i - \text{Mean LDR}) / \# \text{Days}) = 0.0367 = 3.67\%$$

$$\begin{aligned} \text{VaR} &= (\text{Mean LDR} - ((\text{C-value @ 95\% Confidence}) * (\text{Std. Dev. LDR}))) \\ &\quad * \text{Total Share Value} \end{aligned}$$

$$= (0.0052 - (1.65 * 0.0367)) * 1,000,000,000 = 55,200,000$$

lamda = 0.97 EWMA Calculation:

$$\sigma_t^2 = \lambda \sigma_{t-1}^2 + (1 - \lambda) r_{t-1,t}^2$$

# Exhibit 2.1 Poisson Distribution

$\lambda$ : Represented by the number of accidents in the past 35 years over the number of years

$$\lambda = 5/35 = 0.142857143$$

$$P(X) = \frac{\lambda^x e^{-\lambda}}{X!}$$

*Graph 2.1 Poisson Probability Risk Model*

Number of occurrence	Probability	Risk-adjusted Loss
1	0.1238	1337468.76
2	0.00884	191066.97
3	0.000421	13647.64

# Exhibit 3.1.1 Operating Cash Flows

Fiscal Year	<u>2011/12</u>	<u>2012/13</u>	<u>2013/14</u>	<u>2014/15</u> (Projected)	<u>2015/16</u> (Projected)
<b>Cash Flow from Operation</b>					
<b>Inflow</b>					
Profit After Tax (PAT)	118	53	92	61	101
<b>Adjustment for</b>					
Depreciation	19	22	24	35	38
Interest and Finance Costs	10	18	24	24	23
Operating profit before WC changes	147	93	140	120	162
<b>[-] Increase in Inventories</b>					
Domestic Receivables	151	157	257	339	375
[-] Increase in receivable	-6	-100	-82	-36	-133
Net Fixed Assets	343	385	411	407	420
[-] Increase in fixed asset	-42	-26	4	-13	-50
Loans and Advances to Group Companies	59	28	13	0	14
[+] Decrease in Loans and advances	31	15	13		
Other Current Assets	90	78	85	138	130
[+/-] Decrease/increase in other current assets	12	-7	-53	8	-18
<b>Cash Generated from Operation</b>	<u>142</u>	<u>-25</u>	<u>22</u>	<u>79</u>	<u>-39</u>

# Exhibit 3.1.2 Investing Cash Flows

Fiscal Year	<u>2011/12</u>	<u>2012/13</u>	<u>2013/14</u>	<u>2014/15</u> (Projected)	<u>2015/16</u> (Projected)
<b>Cash Flow from Investing</b>					
Investments in Group Companies	5	52	52	52	60
[-] increase in investment	-47	0	0	-8	0
<b>Cash Generated from Investing</b>	<u>-47</u>	<u>0</u>	<u>0</u>	<u>-8</u>	<u>0</u>

# Exhibit 3.1.3 Financial Cash Flows

Fiscal Year	<u>2011/12</u>	<u>2012/13</u>	<u>2013/14</u>	<u>2014/15</u> (Projected)	<u>2015/16</u> (Projected)
<b>Cash Flow from Finance</b>					
Term Loans	0	25	30	60	60
Other Term Liabilities	91	96	131	110	76
[+] Proceeds/ [-] Repayment LT borrowing	30	40	9	-34	-86
current liability	236	294	340	366	393
[+] Increase in Current liability	58	46	26	27	292
Capital	81	81	84	89	109
[+] increase in Capital	0	3	5	20	0
[-] Interest Paid	10	18	24	24	23
[-] Dividends Paid	19	24	26	27	33
<b>Cash From Financing</b>	<u>59</u>	<u>47</u>	<u>-10</u>	<u>-38</u>	<u>150</u>

# Exhibit 3.2 Turnovers and Periods Using Average Method

<b><u>Inventory Turnover</u></b>	<b>2012/13</b>	<b>2013/14</b>	<b>2014/15</b>	<b>2015/16</b>
COGS	549	714	819	884
Inventory	75	82	90	99
	7.32	9.10	9.52	9.35
<b><u>Account Receivable Turnover</u></b>				
Net Sales	1094	1454	1566	1767
Domestic Receivables	157	257	339	375
Export Receivables	0	0	0	0
	0.14	0.18	0.22	0.21
<b><u>Total Asset Turnover</u></b>				
Net Sales	1094	1454	1566	1767
Gross Sales	1194	1588	1871	2112
	0.91624791	0.91561713	0.83698557	0.83664773
<b><u>Average Collection Period</u></b>				
	398.363803	398.638239	436.088761	436.264856
<b><u>Account Payable Turnover</u></b>				
Cost of Raw Materials	549	714	819	884
Bank Borrowings	55	59	60	60
Sundry Creditors	71	81	109	118
Other Current Liabilities	168	200	197	215
Account Payable	294	340	366	393
Account Payable Turnover	1.87	2.25	2.32	2.33



# Exhibit 3.3 Net Sales and Net Profit Margin

Profit and Loss Account	2011-12	2012/13	2013/14	2014/15	2015/16
	Audited	Audited	Audited	Projected	Projected
Gross Sales	1,157	1,194	1,588	1,871	2,112
Net Sales	1,083	1,094	1,454	1,566	1,767
<i>Out of Which:Exports</i>	30	60	112	123	137
Cost of Raw Materials	496	549	714	819	884
<i>Out of Which:Imports</i>	0	0	0	0	0
Depreciation	19	22	24	35	38
Power and Fuel Expenses	11	17	17	19	20
Other Expenses	345	376	474	479	521
<b>Cost of Production</b>	<b>871</b>	<b>963</b>	<b>1,228</b>	<b>1,352</b>	<b>1,463</b>
Changes in Inventories	-12	-4	-13	-8	-5
Cost of Sales	859	959	1,215	1,344	1,458
SG&A	70	60	93	123	152
Profit Before Interest and Tax (EBITA)	154	75	147	100	156
Profit Before Depreciation, Interest, and Tax (EBDITA)	173	96	170	135	194
Non-Operating Income (Net)	21	17	7	14	14
Interest and Finance Costs	10	18	24	24	23
Tax	47	21	37	29	47
Profit After Tax (PAT)	118	53	92	61	101
Dividend	19	24	26	27	33
Retained Profit	99	29	66	34	68

# Exhibit 3.4 Past and Projected Current Ratios

## PEL Current Ratio

PEL	2011-12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Current Ratio	1.4279661	1.272	1.447	1.801	1.791	1.349	1.367	1.451	1.509

## Graph 3.1 Peer Compare (₹ Million) - Current Ratio

Particulars as of March 31, 2014	PEL	Keltech Energies Ltd.*	Solar IndustriesIndia Ltd.\$ **
Current Ratio (times)	1.45	0.9	1.15

# Exhibit 3.5 Interest Cover Rate Calculation

	2011-12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Profit Before Depreciation, Interest, and Tax (EBDITA)	173	96	170	135	194	325	351	403	460
Interest and Finance Costs	10	18	24	24	23	25	28	28	35
Interest Cover Ratio	<b>17.30</b>	<b>5.33</b>	<b>7.08</b>	<b>5.63</b>	<b>8.43</b>	<b>13.00</b>	<b>12.54</b>	<b>14.39</b>	<b>13.14</b>
Benchmark	2	2	2	2	2	2	2	2	2

# Exhibit 3.6 Net Worth, TNW, TOL , and Leverage Ratios

## Net Worth/Tangible Net Worth

	2011-12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
[+] Capital	81	81	84	89	109	109	109	109	109
[+] Reserves and Surplus	374	403	489	534	605	675	781	925	1,100
Net Worth	455	484	573	623	714	784	890	1034	1209

## Total Outside Liability

Term Loans	0	25	30	60	60	50	40	30	20
Other Term Liabilities	91	96	131	110	76	0	0	0	0
Bank Borrowings	12	55	59	60	60	70	80	80	90
Sundry Creditors	56	71	81	109	118	280	365	465	592
Other Current Liabilities	168	168	200	197	215	335	400	450	514
TOL - Total Outside Liability	327	415	501	536	529	735	885	1025	1216

## Adjusted Net Worth

[+] New Worth = TNW	455	484	573	623	714	784	890	1034	1209
[-] Investments in Group Companies	5	52	52	52	60	60	65	70	75
[-] Loans and Advances to Group Companies	59	28	13	0	14	15	20	25	30
Adj. Net Worth	391	404	508	571	640	709	805	939	1104

# Exhibit 3.6 Net Worth, TNW, TOL , and Leverage Ratios

## Leverage Ratios

TOL - Total Outside Liability	327	415	501	536	529	735	885	1025	1216
Net Worth	455	484	573	623	714	784	890	1034	1209
Adj. Net Worth	391	404	508	571	640	709	805	939	1104
TOL/TNW	0.71868132	0.85743802	0.87434555	0.86035313	0.74089636	0.9375	0.99438202	0.99129594	1.00578991
Adj. TOL/TNW	0.83631714	1.02722772	0.98622047	0.93870403	0.8265625	1.03667137	1.09937888	1.09158679	1.10144928