



# Solar Self Maintenance Coat Power generation efficiency evaluation

@雲林電廠2017年10~2018年2月



# Coating data analysis



# 雲林電廠 ( Yunlin Power Plant )

- ◆ Invest 200kWp solar photovoltaic system
- ◆ A total of 729 polycrystalline solar panels
- ◆ The official sale of electricity at the end of September 2017
- ◆ A series of 18 solar panels as experimental group
- ◆ The other five strings (the same 18 pieces/string) as the reference group

Coated  
Panel Line x1



Uncoated Line  
for comparison x5





# Data in Oct,2017

The average difference 「2.899」



DateTime	Average Difference	Uncoated Line 1	Uncoated Line 2	Coated Line	Uncoated Line 3	Uncoated Line 4	Uncoated Line 5
2017/10/1	-1.94%	-1.93%	-3.21%	0.00%	-1.44%	-0.61%	-2.50%
2017/10/2	-2.27%	-2.57%	-3.33%	0.00%	-1.89%	-0.93%	-2.62%
2017/10/3	-2.98%	-3.62%	-4.66%	0.00%	-2.27%	-1.26%	-3.08%
2017/10/4	-5.68%	-8.13%	-8.74%	0.00%	-5.29%	-2.05%	-4.18%
2017/10/5	-2.49%	-2.44%	-3.93%	0.00%	-2.27%	-1.04%	-2.79%
2017/10/6	-2.88%	-3.35%	-4.39%	0.00%	-2.54%	-1.34%	-2.79%
2017/10/7	-3.10%	-3.76%	-4.88%	0.00%	-3.03%	-1.40%	-2.43%
2017/10/8	-3.39%	-4.46%	-5.15%	0.00%	-3.10%	-1.42%	-2.82%
2017/10/9	-3.67%	-5.17%	-6.18%	0.00%	-3.46%	-1.32%	-2.24%
2017/10/10	-2.23%	-2.78%	-3.99%	0.00%	-1.76%	-0.65%	-2.00%
2017/10/11	-2.55%	-3.11%	-4.32%	0.00%	-2.04%	-0.94%	-2.33%
2017/10/12	-3.74%	-5.46%	-6.47%	0.00%	-3.16%	-1.10%	-2.52%
2017/10/13	-6.21%	-9.94%	-9.92%	0.00%	-5.40%	-2.53%	-3.26%
2017/10/14	-14.32%	-24.39%	-19.69%	0.00%	-14.31%	-8.09%	-5.12%
2017/10/15	-16.82%	-30.34%	-24.23%	0.00%	-15.97%	-7.12%	-6.46%
2017/10/16	-1.73%	-2.53%	-3.19%	0.00%	-1.54%	-0.79%	-0.59%
2017/10/17	-1.38%	-2.11%	-2.52%	0.00%	-0.86%	-0.52%	-0.90%
2017/10/18	-2.26%	-3.67%	-3.81%	0.00%	-1.81%	-0.84%	-1.18%
2017/10/19	-1.96%	-2.89%	-3.71%	0.00%	-1.50%	-0.85%	-0.85%
2017/10/20	-2.79%	-4.64%	-4.92%	0.00%	-2.22%	-1.06%	-1.10%
2017/10/21	-2.27%	-3.61%	-4.16%	0.00%	-1.78%	-1.04%	-0.78%
2017/10/22	-0.73%	-1.00%	-1.86%	0.00%	-0.27%	-0.33%	-0.18%
2017/10/23	-0.99%	-1.51%	-2.29%	0.00%	-0.70%	-0.36%	-0.06%
2017/10/24	-0.93%	-1.46%	-2.20%	0.00%	-0.40%	-0.41%	-0.20%
2017/10/25	-0.67%	-1.14%	-1.88%	0.00%	-0.20%	-0.15%	0.01%
2017/10/26	-1.06%	-1.69%	-2.37%	0.00%	-0.72%	-0.28%	-0.25%
2017/10/27	-0.67%	-1.07%	-1.90%	0.00%	-0.32%	-0.15%	0.08%
2017/10/28	-1.94%	-3.39%	-3.67%	0.00%	-1.20%	-0.84%	-0.60%
2017/10/29	-0.96%	-1.54%	-2.14%	0.00%	-0.44%	-0.54%	-0.15%
2017/10/30	-1.30%	-1.97%	-2.55%	0.00%	-0.75%	-0.88%	-0.33%
2017/10/31	-1.84%	-2.88%	-3.13%	0.00%	-1.51%	-1.15%	-0.55%

# Data in Nov,2017

The average difference 「8.839」



DateTime	Average Difference	Uncoated Line 1	Uncoated Line 2	Coated Line	Uncoated Line 3	Uncoated Line 4	Uncoated Line 5
2017/11/1	-1.47%	-2.31%	-2.71%	0.00%	-1.09%	-0.87%	-0.39%
2017/11/2	-2.10%	-3.49%	-3.61%	0.00%	-1.76%	-1.01%	-0.63%
2017/11/3	-5.09%	-7.96%	-7.41%	0.00%	-4.36%	-2.48%	-3.23%
2017/11/4	-8.21%	-11.07%	-8.75%	0.00%	-8.49%	-7.91%	-4.82%
2017/11/5	-6.59%	-9.68%	-7.83%	0.00%	-7.02%	-6.26%	-2.17%
2017/11/6	-11.64%	-18.84%	-15.34%	0.00%	-11.85%	-8.05%	-4.13%
2017/11/7	-5.27%	-7.17%	-6.42%	0.00%	-6.23%	-5.27%	-1.28%
2017/11/8	-5.61%	-7.95%	-6.59%	0.00%	-6.09%	-5.42%	-1.99%
2017/11/9	-8.03%	-12.25%	-10.25%	0.00%	-8.38%	-6.49%	-2.76%
2017/11/10	-10.41%	-16.79%	-13.78%	0.00%	-10.57%	-7.26%	-3.66%
2017/11/11	-13.86%	-23.08%	-19.42%	0.00%	-13.87%	-8.02%	-4.89%
2017/11/12	-11.40%	-16.04%	-15.36%	0.00%	-11.10%	-9.79%	-4.72%
2017/11/13	-8.50%	-12.47%	-11.62%	0.00%	-7.70%	-5.57%	-5.17%
2017/11/14	-10.82%	-12.68%	-12.65%	0.00%	-9.83%	-8.63%	-10.31%
2017/11/15	-9.66%	-13.90%	-12.39%	0.00%	-9.39%	-5.80%	-6.81%
2017/11/16	-8.28%	-11.35%	-10.24%	0.00%	-7.76%	-4.97%	-7.11%
2017/11/17	-8.67%	-11.81%	-10.51%	0.00%	-8.44%	-5.42%	-7.15%
2017/11/18	-9.23%	-12.49%	-11.54%	0.00%	-8.53%	-5.89%	-7.71%
2017/11/19	-9.94%	-14.30%	-12.79%	0.00%	-9.36%	-5.83%	-7.40%
2017/11/20	-8.00%	-9.81%	-11.66%	0.00%	-8.25%	-6.04%	-4.24%
2017/11/21	-8.87%	-11.33%	-11.19%	0.00%	-8.52%	-5.96%	-7.37%
2017/11/22	-9.21%	-11.15%	-11.61%	0.00%	-9.05%	-6.51%	-7.74%
2017/11/23	-9.69%	-12.32%	-12.14%	0.00%	-9.35%	-6.50%	-8.15%
2017/11/24	-11.89%	-15.86%	-15.05%	0.00%	-11.46%	-8.37%	-8.72%
2017/11/25	-9.87%	-12.21%	-12.07%	0.00%	-8.39%	-8.13%	-8.58%
2017/11/26	-13.18%	-19.31%	-17.94%	0.00%	-13.13%	-7.72%	-7.77%
2017/11/27	-10.53%	-12.77%	-12.96%	0.00%	-9.44%	-7.62%	-9.85%
2017/11/28	-10.87%	-13.54%	-14.59%	0.00%	-10.68%	-7.06%	-8.50%
2017/11/29	-10.67%	-15.78%	-12.82%	0.00%	-10.94%	-7.78%	-6.04%
2017/11/30	-15.81%	-24.28%	-21.86%	0.00%	-16.05%	-7.59%	-9.25%

# Data in Dec,2017

The average difference 「17.759」



DateTime	Average Difference	Uncoated Line 1	Uncoated Line 2	Coated Line	Uncoated Line 3	Uncoated Line 4	Uncoated Line 5
2017/12/1	-10.78%	-15.37%	-14.08%	0.00%	-10.48%	-5.86%	-8.09%
2017/12/2	-11.11%	-15.19%	-13.77%	0.00%	-10.77%	-8.21%	-7.59%
2017/12/3	-12.87%	-17.90%	-17.58%	0.00%	-12.55%	-7.59%	-8.72%
2017/12/4	-11.29%	-14.07%	-14.76%	0.00%	-11.28%	-7.58%	-8.76%
2017/12/5	-11.35%	-14.86%	-14.57%	0.00%	-11.06%	-8.10%	-8.17%
2017/12/6	-12.94%	-19.35%	-17.60%	0.00%	-12.14%	-7.84%	-7.76%
2017/12/7	-10.68%	-11.39%	-12.92%	0.00%	-10.24%	-9.63%	-9.21%
2017/12/8	-18.91%	-31.78%	-23.81%	0.00%	-19.95%	-12.65%	-6.34%
2017/12/9	-14.42%	-24.84%	-18.05%	0.00%	-17.46%	-11.54%	-0.21%
2017/12/10	-14.48%	-20.55%	-15.06%	0.00%	-17.98%	-16.18%	-2.64%
2017/12/11	-13.87%	-20.51%	-14.69%	0.00%	-14.88%	-16.21%	-3.06%
2017/12/12	-29.66%	-49.21%	-38.25%	0.00%	-30.50%	-21.67%	-8.69%
2017/12/13	-16.02%	-24.18%	-18.21%	0.00%	-17.19%	-17.69%	-2.81%
2017/12/14	-14.36%	-20.96%	-16.81%	0.00%	-16.34%	-16.22%	-1.47%
2017/12/15	-15.94%	-22.83%	-18.97%	0.00%	-17.42%	-17.32%	-3.14%
2017/12/16	-28.46%	-46.30%	-36.72%	0.00%	-29.69%	-21.48%	-8.10%
2017/12/17	-22.60%	-34.97%	-27.77%	0.00%	-24.08%	-20.85%	-5.33%
2017/12/18	-17.03%	-24.21%	-19.47%	0.00%	-18.27%	-19.28%	-3.90%
2017/12/19	-17.60%	-26.46%	-20.05%	0.00%	-18.76%	-19.77%	-2.98%
2017/12/20	-13.99%	-18.96%	-14.79%	0.00%	-15.19%	-14.47%	-6.53%
2017/12/21	-17.85%	-25.95%	-18.12%	0.00%	-19.88%	-21.54%	-3.78%
2017/12/22	-20.55%	-27.77%	-20.73%	0.00%	-23.47%	-23.12%	-7.66%
2017/12/23	-20.72%	-28.38%	-21.32%	0.00%	-23.37%	-22.73%	-7.79%
2017/12/24	-19.57%	-26.45%	-19.60%	0.00%	-21.05%	-21.92%	-8.81%
2017/12/25	-23.89%	-31.92%	-24.71%	0.00%	-25.58%	-25.06%	-12.20%
2017/12/26	-23.99%	-31.75%	-24.68%	0.00%	-25.94%	-25.45%	-12.12%
2017/12/27	-23.84%	-32.16%	-24.54%	0.00%	-25.32%	-24.90%	-12.31%
2017/12/28	-22.52%	-31.11%	-23.55%	0.00%	-24.01%	-22.85%	-11.07%
2017/12/29	-22.21%	-29.12%	-22.74%	0.00%	-23.79%	-23.29%	-12.11%
2017/12/30	-22.75%	-30.06%	-23.38%	0.00%	-24.29%	-23.53%	-12.50%
2017/12/31	-25.98%	-34.88%	-27.88%	0.00%	-27.13%	-25.09%	-14.89%

# Data in Jan,2018

The average difference 「10.859」



DateTime	Average Difference	Uncoated Line1	Uncoated Line2	Coated Line	Uncoated Line3	Uncoated Line4	Uncoated Line5
2018/1/1	-23.26%	-29.19%	-24.19%	0.00%	-25.48%	-24.05%	-13.37%
2018/1/2	-24.33%	-30.03%	-25.33%	0.00%	-26.31%	-25.23%	-14.76%
2018/1/3	-21.60%	-26.96%	-22.99%	0.00%	-23.39%	-22.91%	-11.76%
2018/1/4	-28.93%	-41.13%	-33.03%	0.00%	-29.91%	-25.29%	-15.28%
2018/1/5	-17.41%	-24.39%	-18.59%	0.00%	-18.92%	-17.49%	-7.67%
2018/1/6	-30.68%	-47.88%	-38.48%	0.00%	-30.88%	-21.37%	-14.79%
2018/1/7	-15.59%	-26.52%	-16.56%	0.00%	-17.70%	-15.32%	-1.86%
2018/1/8	-25.07%	-41.83%	-30.81%	0.00%	-24.59%	-20.14%	-7.99%
2018/1/9	-20.04%	-36.10%	-28.74%	0.00%	-16.40%	-11.73%	-7.24%
2018/1/10	-3.97%	-6.74%	-4.98%	0.00%	-2.96%	-4.44%	-0.75%
2018/1/11	-5.57%	-9.09%	-6.66%	0.00%	-4.64%	-6.25%	-1.22%
2018/1/12	-3.49%	-5.42%	-3.62%	0.00%	-2.80%	-5.19%	-0.44%
2018/1/13	-3.52%	-5.80%	-3.59%	0.00%	-2.88%	-5.01%	-0.32%
2018/1/14	-3.34%	-5.47%	-3.43%	0.00%	-2.85%	-4.83%	-0.11%
2018/1/15	-2.77%	-4.65%	-3.02%	0.00%	-2.78%	-3.82%	0.42%
2018/1/16	-4.35%	-7.28%	-4.42%	0.00%	-4.29%	-5.07%	-0.69%
2018/1/17	-5.96%	-9.98%	-7.14%	0.00%	-6.05%	-5.65%	-0.99%
2018/1/18	-5.66%	-9.70%	-7.12%	0.00%	-5.33%	-5.20%	-0.96%
2018/1/19	-11.10%	-18.51%	-14.87%	0.00%	-10.25%	-6.93%	-4.92%
2018/1/20	-7.32%	-12.34%	-9.40%	0.00%	-5.88%	-5.12%	-3.86%
2018/1/21	-6.78%	-11.34%	-7.83%	0.00%	-6.17%	-6.08%	-2.47%
2018/1/22	-4.56%	-7.40%	-5.34%	0.00%	-3.70%	-3.81%	-2.54%
2018/1/23	-5.14%	-8.46%	-4.88%	0.00%	-4.46%	-5.92%	-2.00%
2018/1/24	-4.90%	-8.05%	-4.35%	0.00%	-4.21%	-5.66%	-2.20%
2018/1/25	-5.35%	-8.54%	-5.23%	0.00%	-4.88%	-5.79%	-2.29%
2018/1/26	-4.97%	-8.22%	-4.48%	0.00%	-4.08%	-5.91%	-2.14%
2018/1/27	-9.46%	-15.89%	-10.91%	0.00%	-8.54%	-8.02%	-3.94%
2018/1/28	-6.63%	-11.00%	-8.26%	0.00%	-5.90%	-5.78%	-2.22%
2018/1/29	-9.84%	-16.49%	-11.72%	0.00%	-8.60%	-8.55%	-3.83%
2018/1/30	-8.05%	-13.59%	-11.14%	0.00%	-7.64%	-5.94%	-1.94%
2018/1/31	-6.72%	-10.14%	-7.80%	0.00%	-6.75%	-5.66%	-3.24%



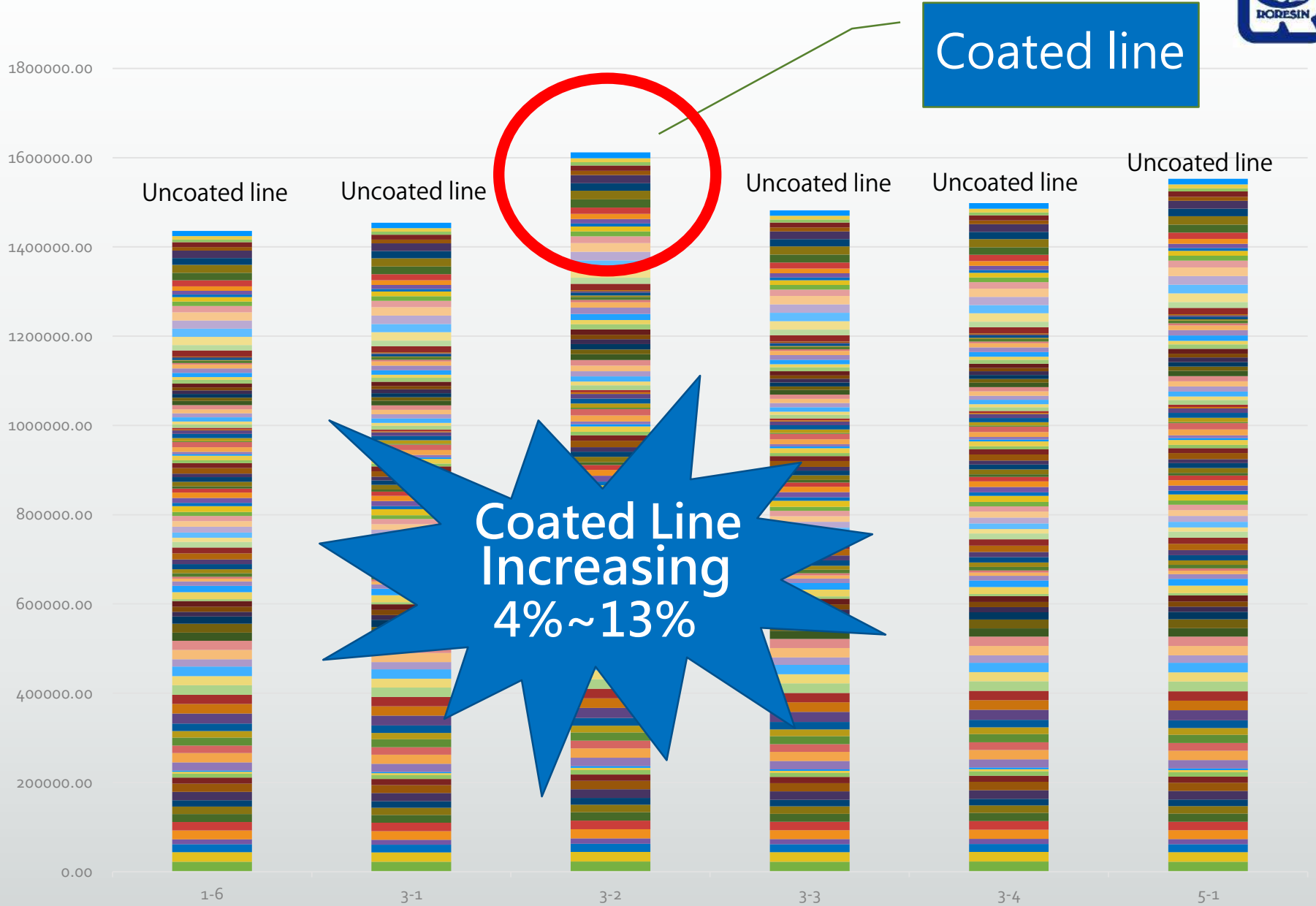
# Data in Feb,2018

The average difference 「12.99」



DateTime	Average Difference	Uncoated Line1	Uncoated Line2	Coated Line	Uncoated Line 3	Uncoated Line4	Uncoated Line 5
2018/2/1	-10.03%	-15.63%	-11.87%	0.00%	-10.25%	-9.39%	-2.98%
2018/2/2	-7.74%	-14.02%	-9.58%	0.00%	-8.26%	-7.20%	0.35%
2018/2/3	-15.68%	-26.20%	-19.66%	0.00%	-15.79%	-11.71%	-5.05%
2018/2/4	-17.99%	-29.75%	-23.23%	0.00%	-17.71%	-12.98%	-6.30%
2018/2/5	-35.24%	-60.35%	-46.07%	0.00%	-34.59%	-21.23%	-13.95%
2018/2/6	-11.36%	-17.69%	-12.29%	0.00%	-12.71%	-10.52%	-3.59%
2018/2/7	-17.84%	-31.35%	-23.56%	0.00%	-17.91%	-12.57%	-3.82%
2018/2/8	-13.02%	-20.51%	-15.30%	0.00%	-14.06%	-12.33%	-2.91%
2018/2/9	-7.38%	-9.57%	-7.39%	0.00%	-8.68%	-9.44%	-1.83%
2018/2/10	-11.90%	-15.92%	-13.09%	0.00%	-12.94%	-12.30%	-5.25%
2018/2/11	-10.83%	-13.48%	-15.00%	0.00%	-10.52%	-10.21%	-4.95%
2018/2/12	-12.82%	-15.80%	-16.73%	0.00%	-13.32%	-11.30%	-6.94%
2018/2/13	-8.37%	-7.63%	-10.68%	0.00%	-9.38%	-9.35%	-4.83%
2018/2/14	-11.08%	-11.36%	-12.81%	0.00%	-12.42%	-11.73%	-7.08%
2018/2/15	-10.58%	-10.41%	-12.06%	0.00%	-12.12%	-11.29%	-7.04%
2018/2/16	-11.88%	-12.64%	-13.81%	0.00%	-13.04%	-12.10%	-7.80%
2018/2/17	-11.36%	-12.14%	-13.35%	0.00%	-12.41%	-11.68%	-7.20%
2018/2/18	-10.72%	-10.72%	-12.24%	0.00%	-11.88%	-11.38%	-7.36%
2018/2/19	-13.39%	-14.11%	-14.93%	0.00%	-14.41%	-13.95%	-9.54%
2018/2/20	-15.61%	-16.79%	-17.30%	0.00%	-16.77%	-15.38%	-11.80%
2018/2/21	-15.22%	-16.25%	-16.92%	0.00%	-16.08%	-15.24%	-11.59%
2018/2/22	-25.67%	-35.73%	-32.51%	0.00%	-26.10%	-18.83%	-15.19%
2018/2/23	-6.24%	-7.77%	-8.34%	0.00%	-7.52%	-8.13%	0.55%
2018/2/24	-9.91%	-13.67%	-13.37%	0.00%	-11.80%	-10.13%	-0.56%
2018/2/25	-7.88%	-10.37%	-10.48%	0.00%	-9.96%	-9.08%	0.49%
2018/2/26	-7.43%	-9.40%	-9.92%	0.00%	-9.48%	-8.97%	0.61%
2018/2/27	-10.54%	-14.58%	-14.09%	0.00%	-12.38%	-10.69%	-0.98%
2018/2/28	-13.61%	-19.15%	-18.05%	0.00%	-15.73%	-12.25%	-2.88%

# Power generation amount of each column

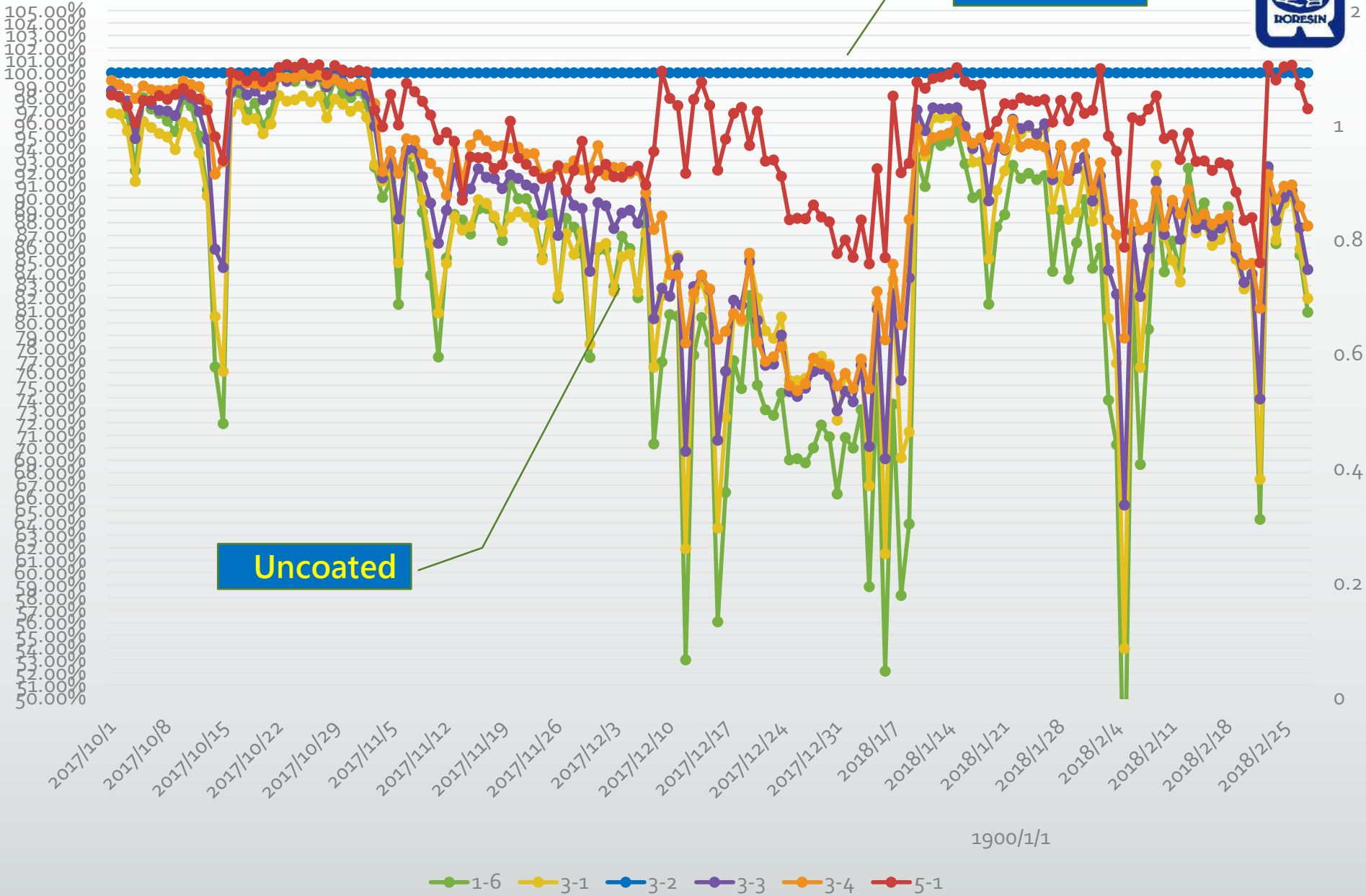


From Oct,2017 till Feb,2018



Coated

Uncoated



1-6 3-1 3-2 3-3 3-4 5-1

# Average difference

『10.61%』



-37.00%  
-36.00%  
-35.00%  
-34.00%  
-33.00%  
-32.00%  
-31.00%  
-29.00%  
-28.00%  
-27.00%  
-26.00%  
-25.00%  
-24.00%  
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-4.00%  
-3.00%  
-2.00%  
-1.00%  
0.00%

『2.89%』

『5.81%』

『9.83%』

『10.09%』

2017/10/1

2017/11/1

2017/12/1

2018/1/1

2018/2/1

● Average Difference