

2018

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# Agenda

**Q4 Financial Results** 

Financial Overview

Market Outlook

Trade Update

Yulin JV Update

Market Development

Short Term Business Plan

Guidance

Q & A

# **Highlights**

Revenues: \$48.9M

EBITDA: (\$ 3.8M) Loss

#### December 31, 2018 Cash Balance of \$31.8M

Cash Decrease of (\$9.2M)

- Cash Outflows from Operations (\$8.7M)
  - Includes \$6.3M Interest Payment
- Working Capital Decrease of \$2.0M

#### FBR Production Costs of \$14.6/kg

- FBR Capacity Utilization ~25%
- Lower Spending Due to Continued Efforts to Reduce Costs
- FBR Production Volume of 1,209MT

#### Silicon Gas Sales

- Sales Volume of 920MT (6.3% Increase vs. Q3'18)
- 1.6% Silane Gas Price Decrease vs. Q3'18

#### Yulin JV Start-up

- ~5,400MT FBR Polysilicon Produced in 2018
- ~100MT Siemens Electronic Grade Polysilicon Produced in 2018

#### Temporary Shutdown of FBR Proposed Beginning March 1, 2019

- Maintain Sales from Existing Inventories
- Dependent on Market Developments and Restored Access to the Chinese Market

# **Key Metrics**

2018

Polysilicon Sales	s Volume **
Total	1.690M

Inventory Decrease 26MT

FBR Production		
Actual	1,209MT	
Guidance*	1,190MT	
Deviation	1.6%	

FBR Cash Cost		
Actual	\$14.6/kg	
Guidance*	\$15.3/kg	
Deviation	-4.6%	

Total Polysilicon Production		
Actual	1,664MT	
Guidance*	1,660MT	
Deviation	0.2%	

Semiconductor Production		
Actual	313MT	
Guidance*	340MT	
Deviation	-8.0%	

Silicon Gases Sales Vol.		
Actual	920MT	
Guidance*	850MT	
Deviation	8.2%	

<sup>\*</sup> Guidance Presented October 24, 2018

<sup>\*\*</sup> Excludes Fines and Powders



# **Summary of Segments**

(USD million)	Q4 2	018	Q3 2	2018	YTD 2	2018
	Revenues	EBITDA	Revenues	EBITDA	Revenues	EBITDA
Solar Materials (Moses Lake)	9.9	(9.1)	6.2	(9.9)	69.2	(26.6)
Semiconductor Materials (Butte)	39.0	11.0	37.6	9.3	152.9	52.2
Other	-	(5.6)	-	(5.4)	-	(30.0)
Eliminations	(0.0)	(0.0)	<u> </u>	<u> </u>	(0.9)	(0.5)
REC Silicon Group	48.9	(3.8)	43.7	(6.1)	221.2	(4.9)

# **Key Financial Results**

#### **Solar Materials**

Revenues: \$9.9M (60.6% Increase vs. Q3'18)

EBITDA Contribution: (\$9.1M) Loss

- Polysilicon Sales Volumes 1,270MT (93.1% Increase vs. Q3'18)
  - (18.2%) Average Price Decrease vs. Q3'18
  - (16.6%) Prime Grade Solar Price Decrease vs. Q3'18

#### **Semiconductor Materials**

Revenues: \$39.0M (3.8% Increase vs. Q3'18)

EBITDA Contribution: \$11.0M

- Total Polysilicon Sales Volumes 420MT (7.7% Decrease vs. Q3'18)
  - (3.1%) Average Price Decrease vs. Q3'18
  - (4.7%) Semiconductor Grade Price Decrease vs. Q3'18
- > Silicon Gas Sales Volumes 920MT (6.3% Increase vs. Q3'18)
  - (1.6%) Silane Price Decrease vs. Q3'18

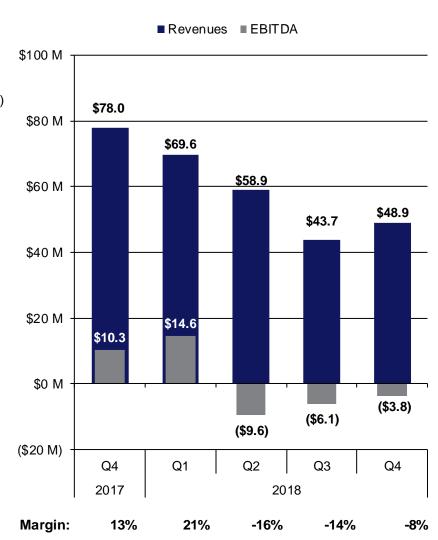
#### Other and Eliminations

Net Cost: (\$5.6M) (3.7% Increase vs. Q3'18)

#### EBITDA Loss of (\$3.8M)

Compared to Q3 EBITDA Loss of (\$6.1M)

- Higher FBR Sales Volumes Lower Prices
- Higher Silicon Gas Sales Volumes
- Inventory Write-downs in Q3'18



### Cash Flows

# Cash Outflows From Operating Activities (\$8.7M)

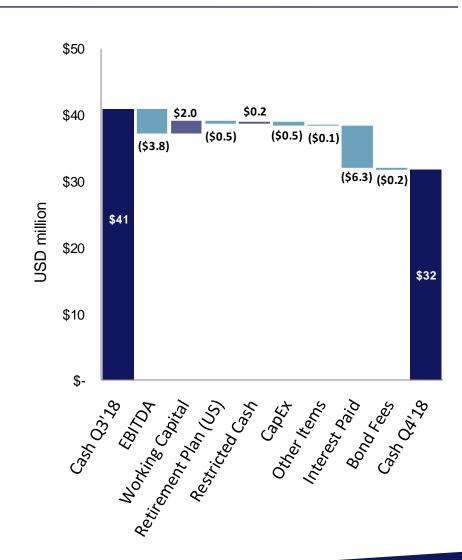
- > EBITDA Loss of (\$3.8M)
- Working Capital Decrease \$2.0M
  - Decrease in Inventories \$7.4M
  - Increase in Receivables (\$3.1M)
  - Decrease in Payables (\$2.3M)
- Interest Paid (\$6.3M)
- Retirement Plan Contribution (\$0.5M)
- > Other (\$0.1M)

# Cash Out Flows From Investing Activities (\$0.2M)

- > Capex (\$0.5M)
- Release of Restricted Cash \$0.2M

# Cash Out Flows From Financing Activities (\$0.2M)

(\$0.2M) Fees Associated with Bond Issue



# Liquidity

# 2018

### Nominal Debt - \$133.0M

- Decrease of (\$1.5M) in Q4'18
  - (\$1.5M) Due to Stronger USD Relative to NOK

### Nominal Net Debt - \$101.2M

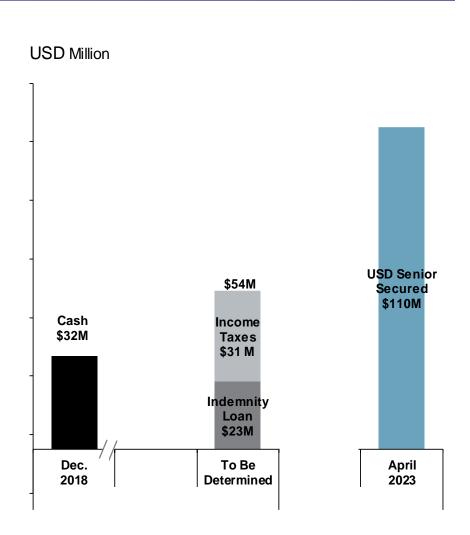
- Increase of \$7.7M in Q4'18
  - Decrease in Cash of \$9.2M
  - Decrease in Nominal Debt of (\$1.5M)

## Indemnity Loan - \$23M

- Callable Beginning in February 2016
- Has not Been Called
- Due Date is Uncertain

## Reassessment of Tax - \$29M

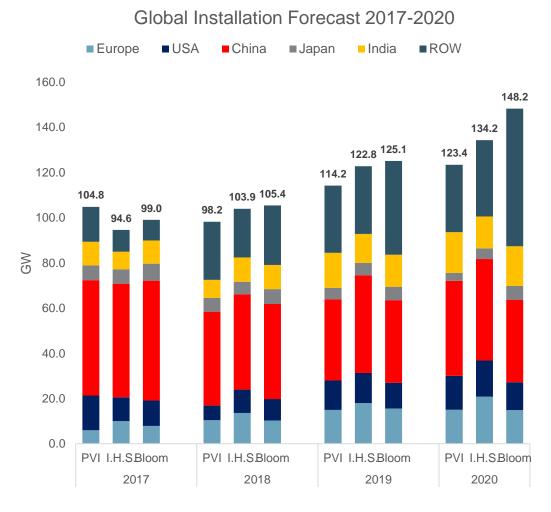
- Uncertain Timing and Outcome
- Recent Decision by Norges Høyesterett in Yara Supports REC's Tax Position





# Global PV Installation Forecast by Different Analysts

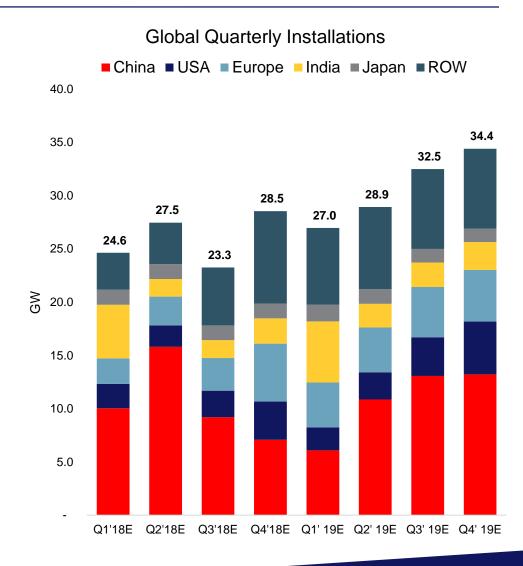
- 2018 PV Installation
  - ~98 GW to 105 GW
- 2019 Global PV Installation
  - ~115 GW to 125 GW
- China PV Installation Declined in 2018
  - ~42 GW in 2018
  - ~50 GW in 2017
- China's Target for 2019 is Still Uncertain
  - ~40 GW to 50 GW



Source: PV Infolink - Database dated January 2019, Bloomberg PV Market Outlook, Q4 Dated November 2018 IHS Installations Tracker Dated December 7, 2018

# Quarterly Installation Estimates: 2018 – 2019

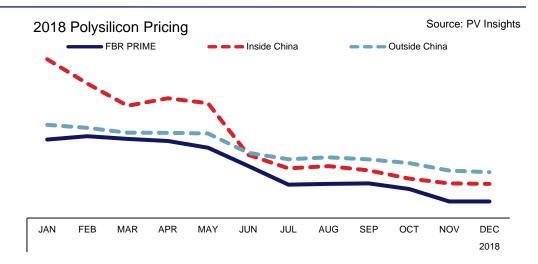
- Prices Along the PV Value Chain Have Stabilized During Q4/18
- Installation Growth Driven by Low PV Module Prices in 2018
  - Except for China
  - 40 GW Exports from China
- Demand will Gradually Improve in the Next Three Quarters of 2019
  - Q1'19 Expected Demand to be Near Q4'18
- Three Largest Markets In 2019
  - China
  - Europe
  - US

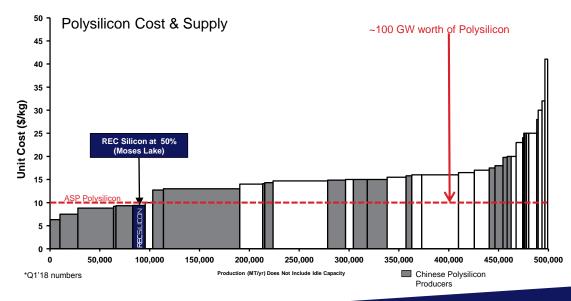


Source: IHS Markit PV Installations Tracker - Q4 2018, December 7, 2018

## 2018 Polysilicon Price Trend

- Chinese ASP Declined in H2'18 After May 31, 2018 Announcement
- ASP is below Cash Cost of Most of the Polysilicon Producers





# Current Polysilicon Prices Lead to Curtailments

- Curtailments of Production Inside and Outside China
- New Capacity will Partly be offset by Shutdown of Higher Cost Capacity
- China NDRC in December 2018
  - "Notice on further pushing forward debt settlement for zombie enterprises and de-capacity enterprises"
  - Policy aims to further push forward supply-side structural reform by actively dealing with debt issues of zombie enterprises and enterprises impacted by de-capacity campaign

#### PV InfoLink Supply And Demand

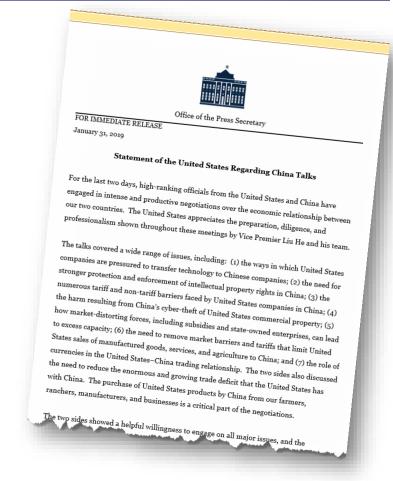
Calculation of Polysilicon Capacity Decrease/Increase from 4Q18 to 2Q19, Unit: Tons

	· ,		
Capacity	Estimated Increase	Capacity	Estimated Decrease
60,000	Company I	8,000	Company A
40,000	Company J	15,000	Company B
36,000	Company K	10,000	Company C
15,000	Company L	14,000	Company D
15,000	Company M	10,000	Company E
13,000	Company N	20,000	Company F
<u>6,000</u>	<u>Company O</u>	54,000	Company G
185,000	Total	26,000	Company H
		157,000	Total



### Statement of the United States **Regarding China Talks**

- ...(2) how market-distorting forces, including subsidies and state-owned enterprises, can lead to excess capacity;
- (3) the need to remove market barriers and tariffs that limit United States sales of manufactured goods, services, and agriculture to China
- ...Reduce the enormous and growing trade deficit that the United States has with China. The purchase of United States products by China from our farmers, ranchers, manufacturers, and businesses is a critical part of the negotiations...



# Preserving Critical Materials an Increasing USG Priority

- USG is Focused on Value of Advanced Materials Particularly for Strategic Industries Like Energy, Lithium Battery and Electric Vehicles
  - Focused on Strengthening US
    Manufacturing, Internalizing and Supporting
    Supply Chains
  - Focused on Countering China's Industrial Policy/Planned Dominance in Batteries
- REC Silicon is the Only US Producer of Silane Gas Which is Becoming a Critical Material for the Lithium Battery Supply Chain





# YULIN JV UPDATE



## Yulin JV Production Update



#### > 2018 Production

- ~1,850 MT of FBR Polysilicon in (Q4'18)
- Design Capacities Demonstrated
- EG Grade CZ and Float Zone Siemens Polysilicon Produced
- 2019 Targets
  - ~14,000 MT of Polysilicon
  - Start High Purity FBR Production

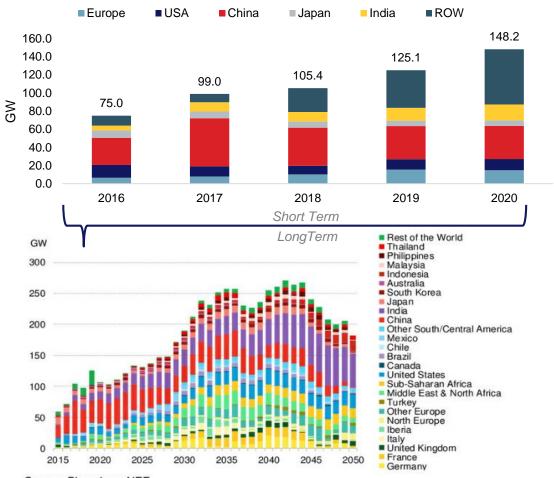




### PV Market Will Double Within The Next 5-10 Years

- Gradually PV will be Competitive without Subsidies
- Electricity StorageSolutions
- Strong Focus on Clean
  Energy Due to Local
  Pollution and Climate
  Change Regulations
- 90% of PV Modules are Based on Polysilicon

#### Bloomberg PV Installations 2016-2020

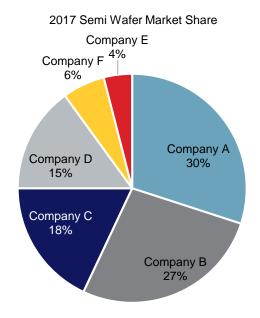


Source: Bloomberg NEF

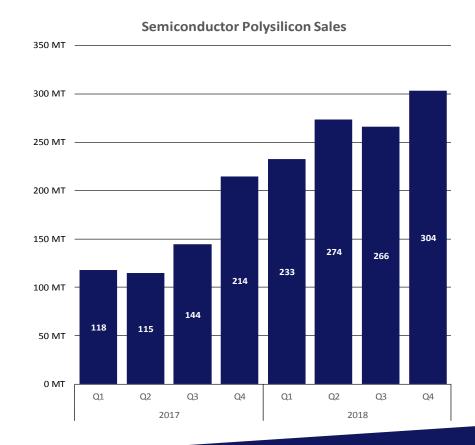
# Strong Growth in Semiconductor Polysilicon Sales

- **Quality Requirement Create Barriers for New Suppliers/Entrants**
- **Long-Term Supply Relationship**
- **REC Produces the Highest Purity Polysilicon for the FZ Industry**

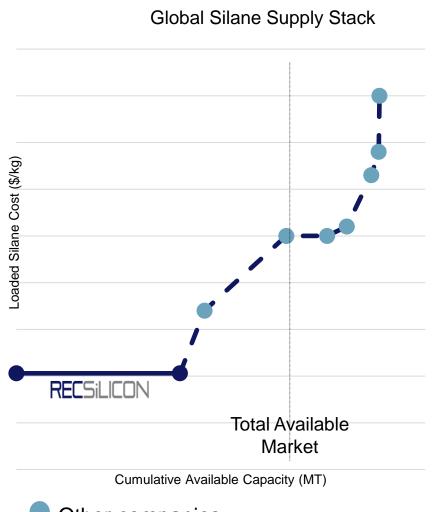
#### Top 4 Silicon Wafer Companies Have 90% Market Share

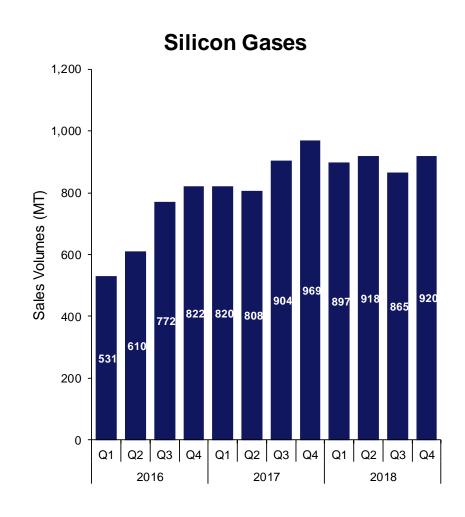


Sources: Market Analysis Data



# Silicon Gas Sales with Very Competitive Cash Cost







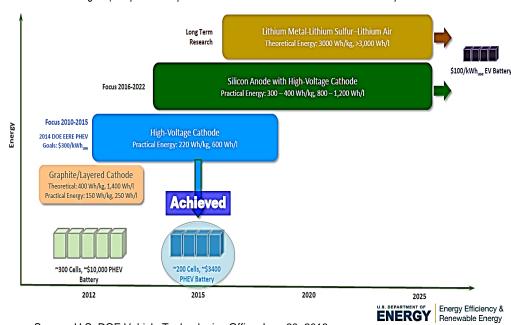
# Silicon Anode Battery Technology Development Targeted by US Department of Energy

#### Silicon Anodes:

- Only Battery **Technology That Meets** DOF's Cost Goal
- Improves Energy Density
- Reduces Weight
- Allows Faster Charging
- Industry Investing to Resolve Outstanding Issues

#### **VTO R&D Materials Roadmap**

Current emphasis: The development of high voltage cathodes and electrolytes coupled with high capacity metal alloy anodes. Research to enable lithium metal-Li sulfur systems.



Source: U.S. DOE Vehicle Technologies Office June 20, 2018



# Managing Inventory Levels: Moses Lake Temporary Shutdown

#### **Excessive Inventory Levels Due to:**

- Lack of Access to the Chinese Market
- Market Conditions

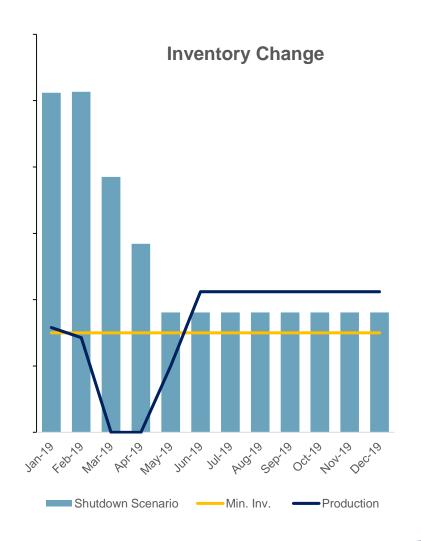
#### **Managing Excessive Inventory Levels:**

- Propose a Two Month Temporary Shutdown
- Decision to be Made by March 1, 2019 by REC Silicon Board
  - No Reduction in Headcount
  - Inventory Continues to be Sold to Customers

#### Resume Production at the Moses Lake Facility:

- Once Inventory Levels Have Normalized
- Demand Forecasts Indicate That Demand is Sufficient for Resuming Production

REC Silicon Expects that a Trade Resolution or Market Improvement Occurs in H2'19 to Justify Production at a Higher Capacity.



### Solar Materials: Short Term Business Plan

#### **Actions Taken:**

- Reduced FBR Utilization
  - Operating at ~25% Capacity
  - Manage Inventory Levels
- Reviewing All Costs
  - Reduce Expenditure Levels
  - Renegotiate Supply Contract Terms
- Maintain Company Liquidity
  - Assumed Current Capacity Utilization

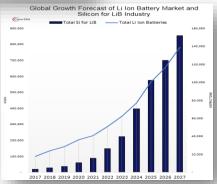
### **Next Steps:**

- Actively Pursue US/China Solar Trade
  War Resolution
- Temporary Shutdown of Moses Lake Possible on March 1, 2019
  - Dependent On US Trade Negotiations with China
  - Two Month Shutdown Expected
  - Maintain Sales From Existing Inventories
  - Maintain Current Headcount
- Maintain Company Liquidity

# Potential Upside for REC Silicon ASA

- Trade War Resolution
  - Substantial Increase in Revenue with 100% FBR Utilization, Higher ASP and Lower Cash Cost
- The Battery Market
  - Substantial Increase in Demand for Silane
- Increased Ownership in Yulin JV From 15% to 49%
  - Will be in a Good Negotiation **Position**









**GUIDANCE** 

# 2018

### 2018 Results vs. Guidance

FBR Production ***		
2018	7,584MT	
Guidance*	7,565MT	
Deviation	0.2%	

FBR Cash Cost		
2018	\$12.2/kg	
Guidance*	\$12.3/kg	
Deviation	-0.8%	

Total Polysilicon Production		
2018	9,280MT	
Guidance*	9,276MT	
Deviation	0.0%	

Semiconductor Production		
2018	1,126MT	
Guidance*	1,153MT	
Deviation	-2.4%	

Silicon Gas Sales		
2018	3,600MT	
Guidance*	3,530MT	
Deviation	2.0%	

2018 CapEx **	
Maintenance	\$2M
Guidance*	\$3M
Deviation	-33.3%

<sup>\*</sup> Guidance Presented October 24,2018

<sup>\*\*</sup> Additions to Property Plant and Equipment

<sup>\*\*\*</sup> Excludes Fines and Powders

## Q1 and 2019 Guidance

Semiconductor Production	
Q1	290MT
2019	1,210MT

Silicon Gas Sales		
Q1	850MT	
2019	3,840MT	

2019 CapEx *	
Maintenance	\$4M

<sup>\*</sup> Additions to Property Plant and Equipment



May 9, 2019

