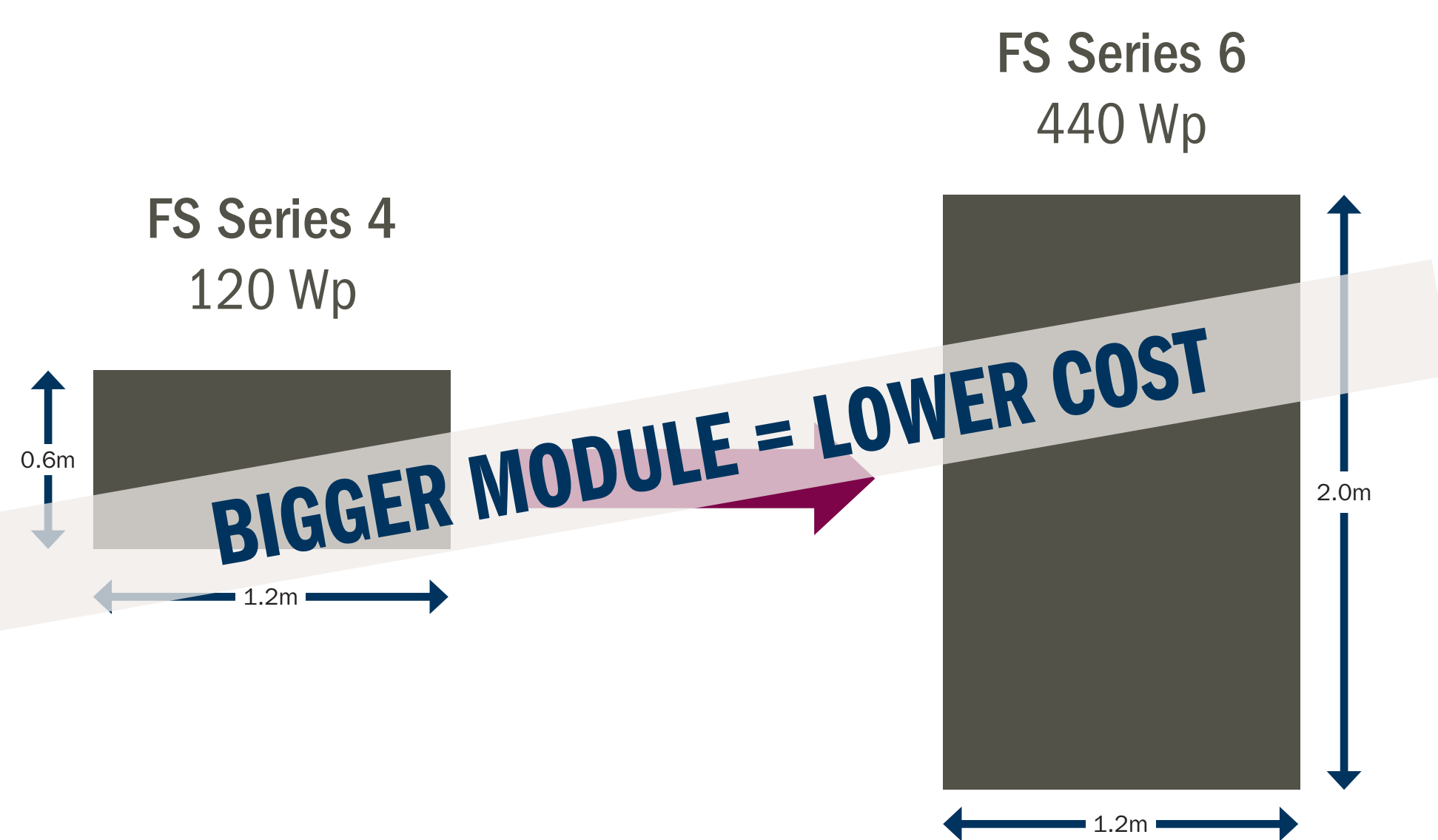


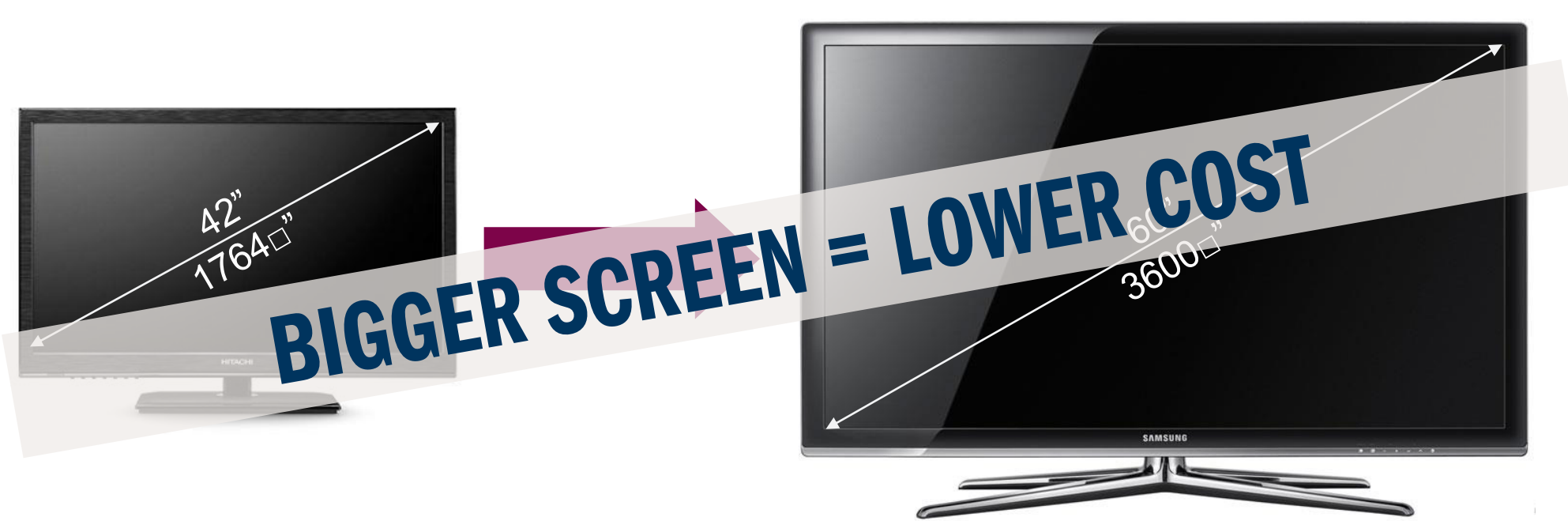
## THIN FILM SCALES

- Unit of process for CdTe is the glass; scaling benefit
- Unit of process for c-Si is the wafer; no scaling benefit
- Same manufacturing process as the previous technology
- Highest power utility-scale modules in the market

Thin film cost scales non-linearly...

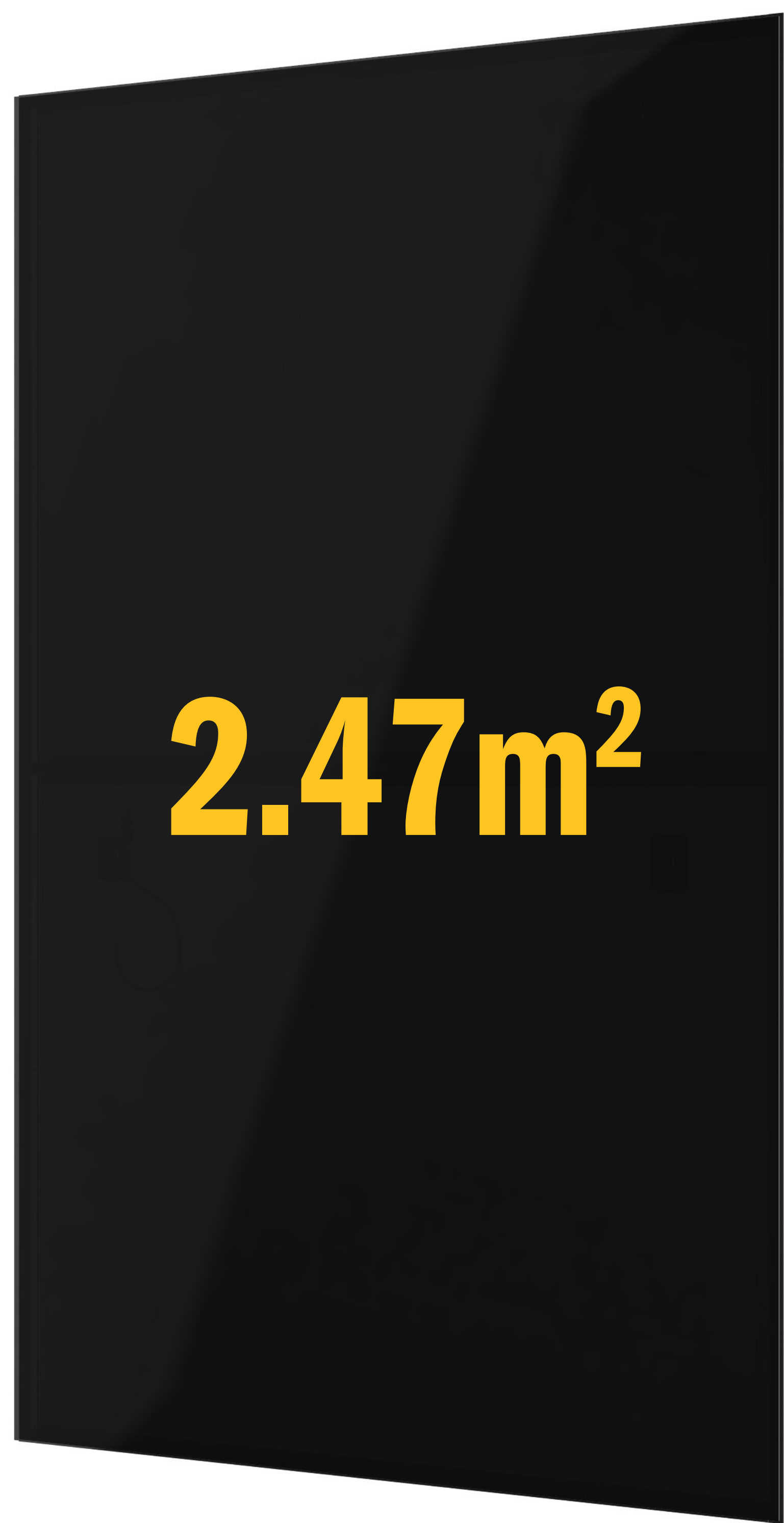
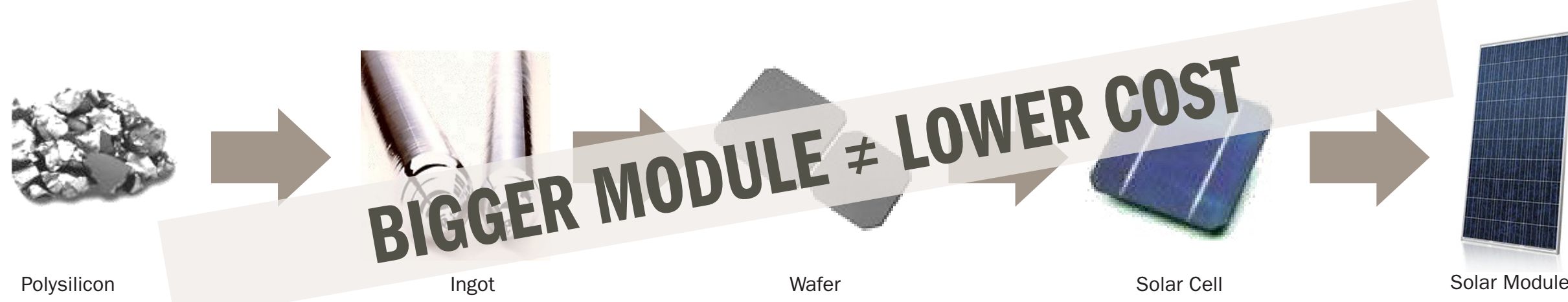


...similar to LCD screens.



No cost benefit from scaling c-Si

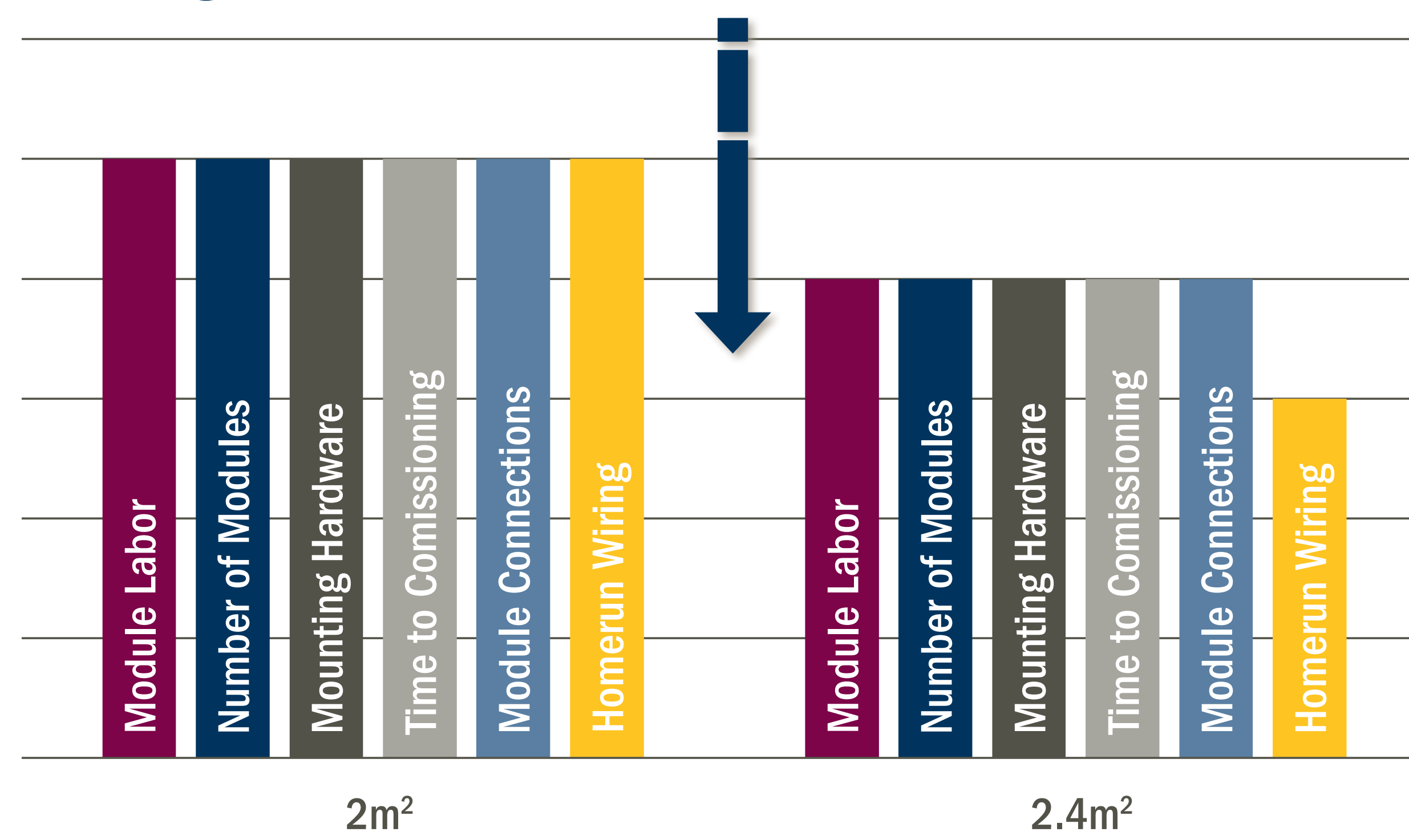
Crystalline Silicon Batch Technology: Unit of process is the Wafer



## FORM FACTOR IMPACTS

- ~2.47m<sup>2</sup> module reduces variable BOS costs
- More Watts per install operation
- Site construction is faster; less modules to install
- Structural and labor components are reduced for \$/W
- Module installs trials independently verified by 3rd party EPC

Larger module size equals lower variable BOS



### Field Install Trials

	Normalized Rate	Normalized Cost
<b>Exosun</b>		
First Solar Series 6	1.00	1.00
Canadian Solar Modules	1.10	1.39
<i>Delta</i>	-10%	-39%
<b>ATI</b>		
First Solar Series 6	1.00	1.00
Canadian Solar Modules	0.98	1.24
<i>Delta</i>	2%	-24%

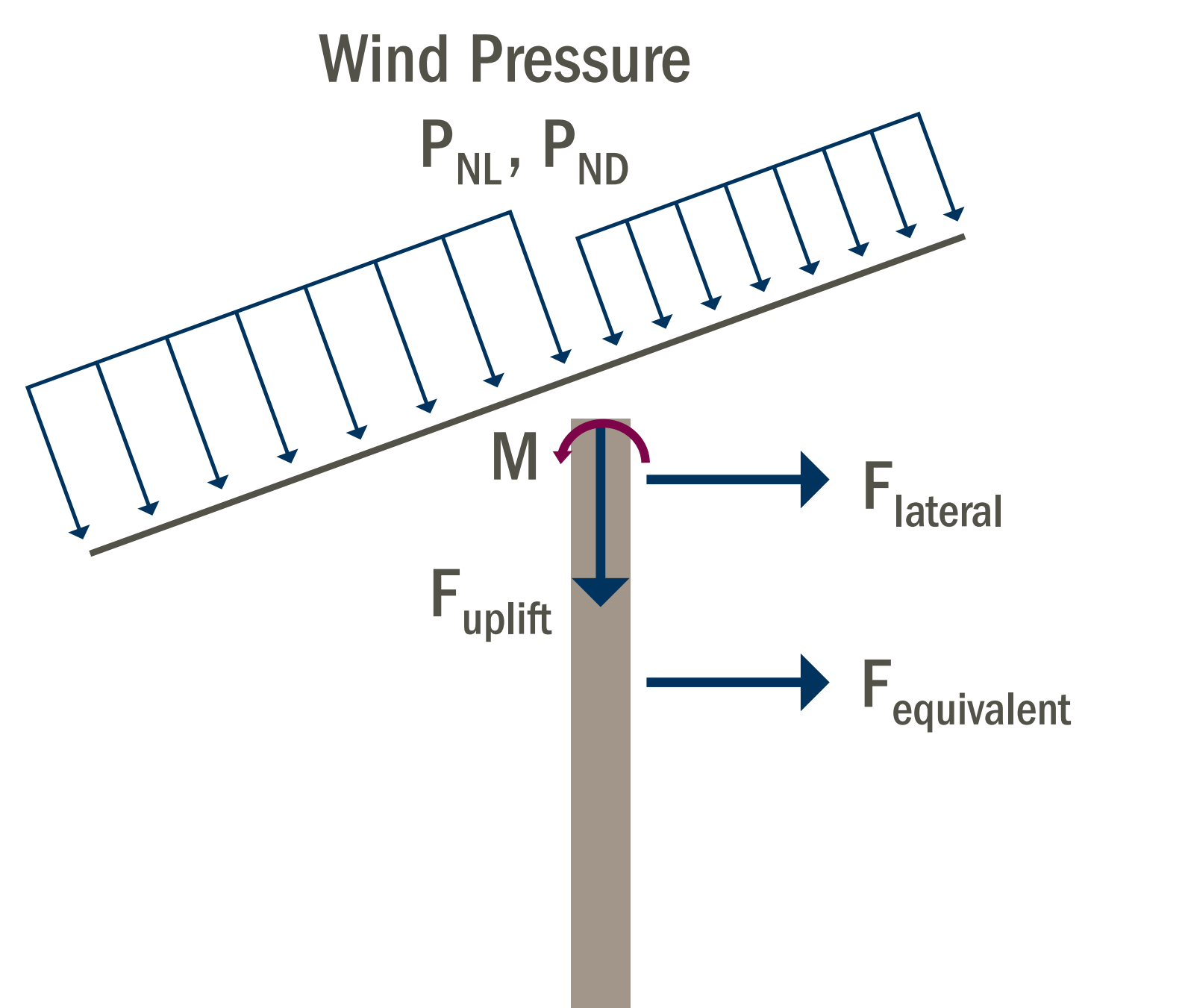
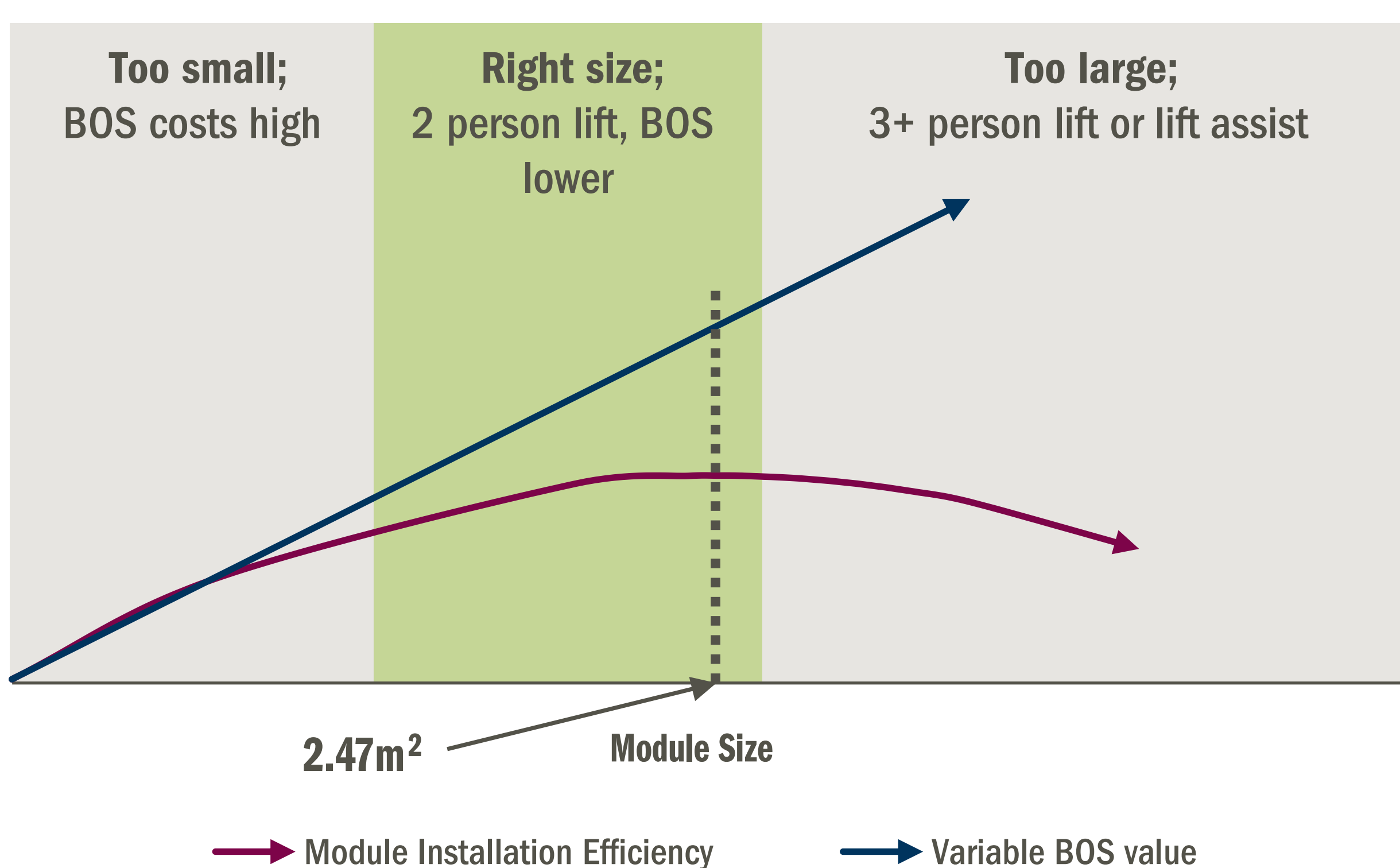
\*\$60/hr, 430W, 340W

**MCCARTHY**



## WHY WE CHOSE 1.23M X 2M

- ~2m module height is common, proven to work on any structure
- Module is optimized for a comfortable two person lift
- The larger the module, the lower the variable BOS cost
- Structure design constraint is wind load, not module weight
- 1.23m width is independent of the loading profile



## STRINGS & HARNESSSES

- Series 6 has a shorter string length (6 modules for 1500VDC)
- Harness lowers cost by:
  - Creating a sub-collection point
  - Effective increase of string length
- Structural / Site Flexibility
  - Harnesses can be designed optimally for site specific conditions. For example, a 7 string (in parallel) harness or a 5 string harness.
- Smaller electrical 'pixel' allows optimized structures
- Independently validated by Sgurr and Burns & McDonnell

Typical 7 string harness (positive)

