

Should you invest in a 6th generation TFT-LCD production facility?

May 19, 2020

PENTA



LG.PHILIPS Displays

The investment is very risky

The results are presented in 5 steps:



Should LG.Philips invest in a 6th generation TFT-LCD production facility?



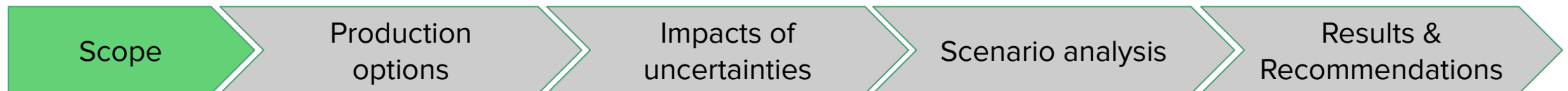
Profitability



Customer satisfaction

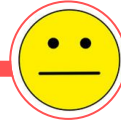


Uncertainties



The production options

Customer
satisfaction



Option 1

Produce only the
most profitable
product

Option 2

Produce the most
profitable product per
product market

Option 3

Produce all products,
regardless of
profitability



Profitability

Scope

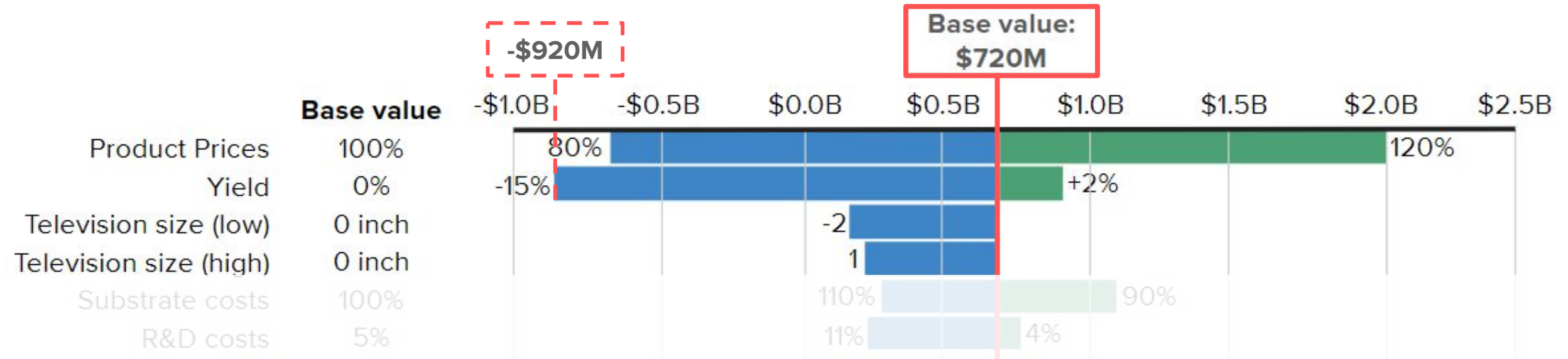
Production
options

Impacts of
uncertainties

Scenario analysis

Results &
Recommendations

What are the impacts of uncertainties?



Product prices and yield have a huge impact on the NPV!



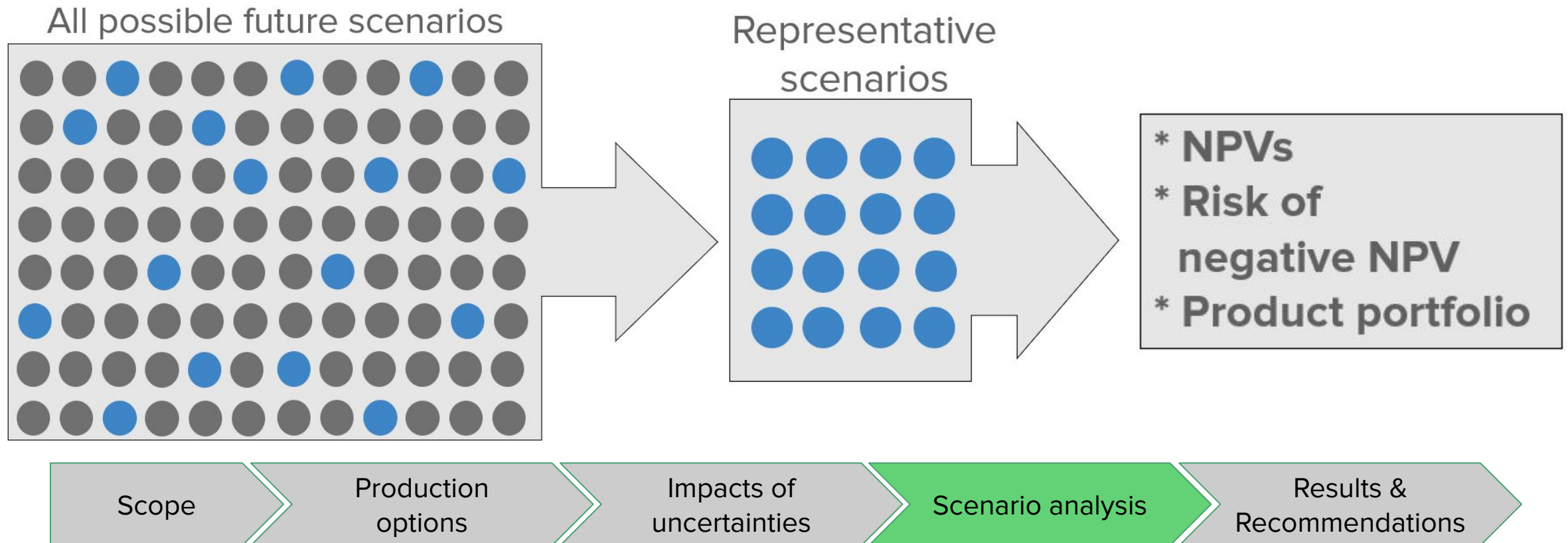
Scenario analysis

All uncertain future scenarios are taken into account.

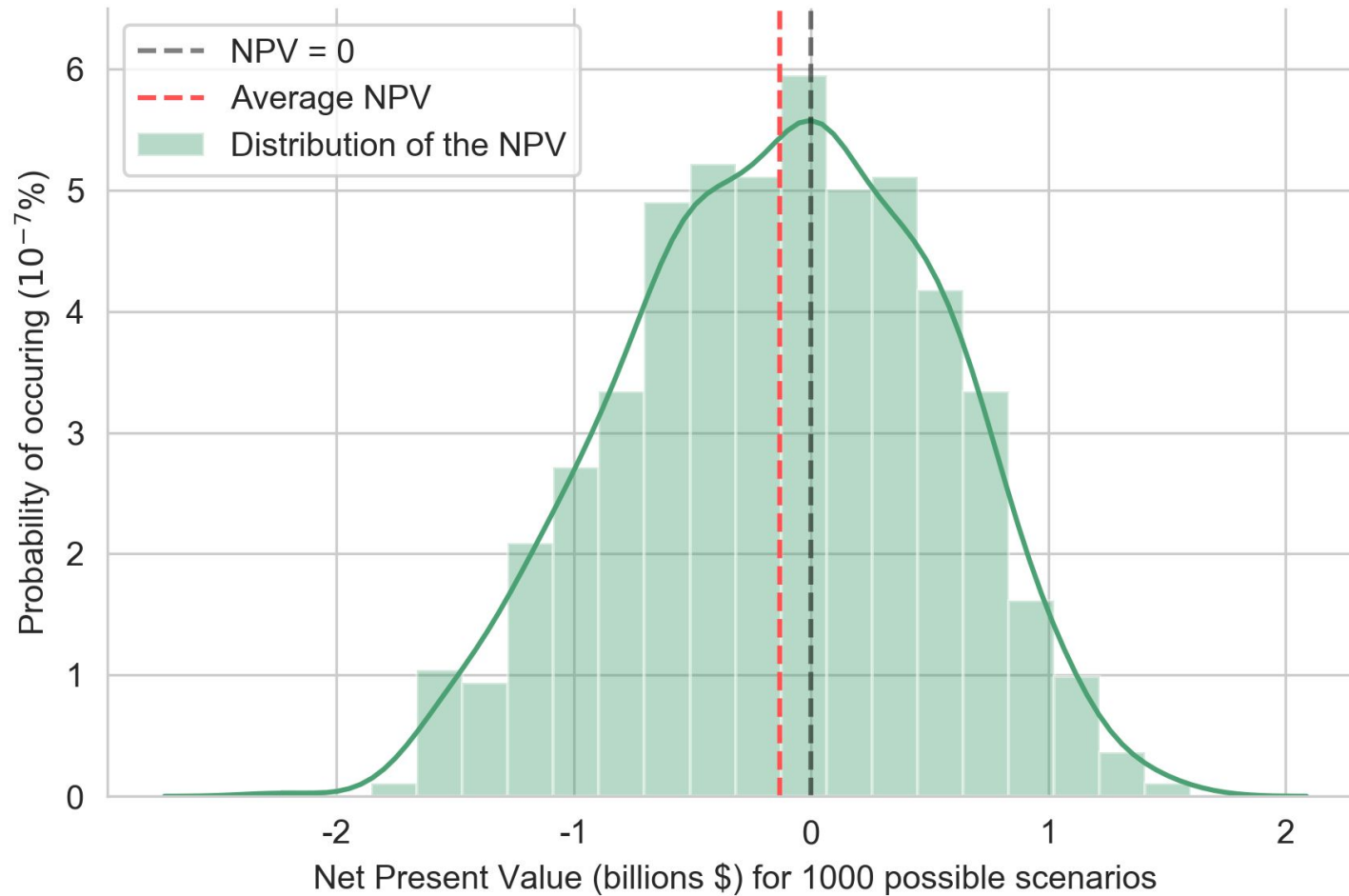
What is scenario analysis?

There are too many possible futures:

More than the number of atoms in the universe!

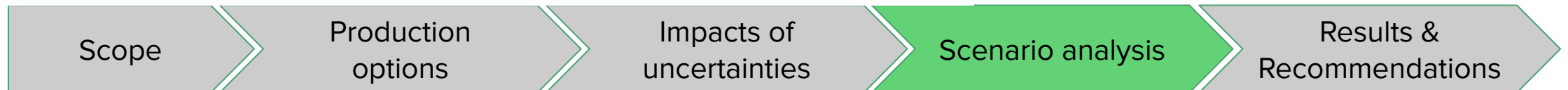
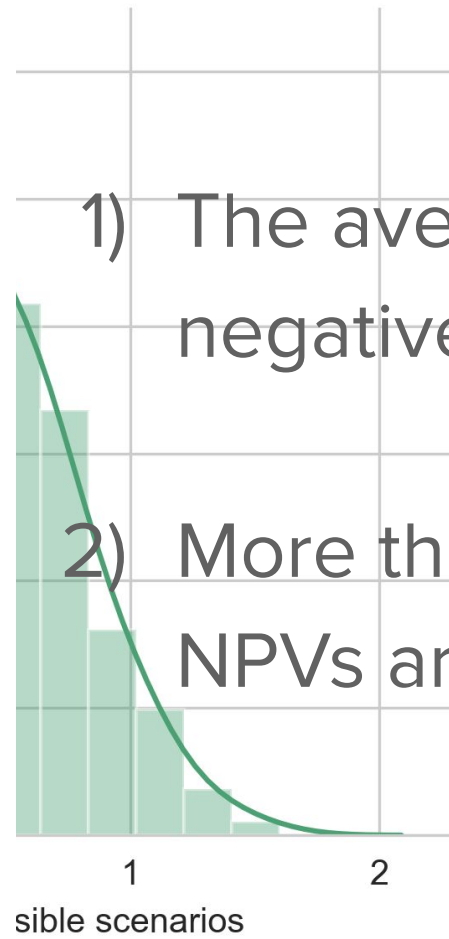


What is scenario analysis?



1) The average NPV is negative

2) More than 50% of the NPVs are negative



How is the optimal substrate size chosen?

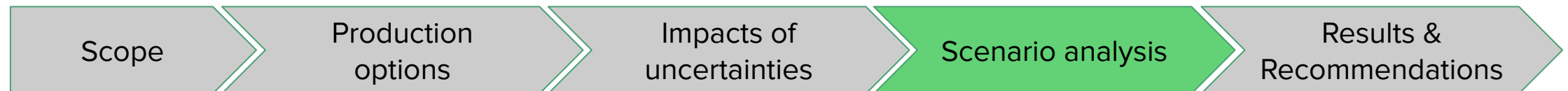
	1.85	1.84	1.83	1.82	1.81
1.15	-430	-404	-732	-707	-681
1.14	-389	-363	-692	-666	-641
1.13	-347	-322	-651	-626	-602
1.12	-306	-281	-612	-587	-562
1.11	-265	-251	-571	-546	-522
1.1	-235	-211	-530	-510	-485
1.09	-194	-174	-494	-469	-445
1.08	-157	-133	-453	-429	-405
1.07	-216	-192	-519	-495	-471
1.06	-525	-502	-478	-455	-433
1.05	-484	-461	-439	-416	-392

Average NPV (million USD)

	1.85	1.84	1.83	1.82	1.81
1.15	72%	71%	95%	94%	94%
1.14	70%	69%	94%	93%	93%
1.13	68%	67%	93%	92%	91%
1.12	66%	65%	91%	90%	89%
1.11	64%	64%	89%	88%	87%
1.1	62%	61%	87%	86%	84%
1.09	60%	59%	85%	83%	82%
1.08	57%	56%	82%	81%	79%
1.07	62%	60%	87%	86%	84%
1.06	87%	86%	85%	83%	82%
1.05	85%	84%	83%	81%	79%

Risk: Probability of negative NPV




Optimal substrate size: **1.84m by 1.08m**

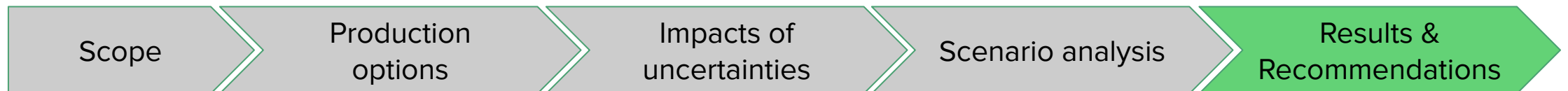


Conclusion

How does this knowledge translate into making a decision?

How do we weigh the investment options?

Option	Profitability (Average overall NPV)	Customer satisfaction	Risk	
1	-\$106M		54%	Very good
2	-\$133M		56%	Good
3	-\$255M		64%	Okay
				Poor
				Very poor



Our recommendations

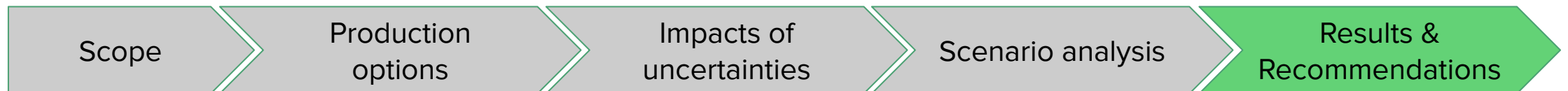


Recommendation 1: **Invest using option 2**

- Accept the **high risk of 56%**
- Accept negative **average NPV of -\$133M**



Recommendation 2: **Do not invest**





Thank you for your time and attention

We would love to answer any questions you may have.

Contact

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