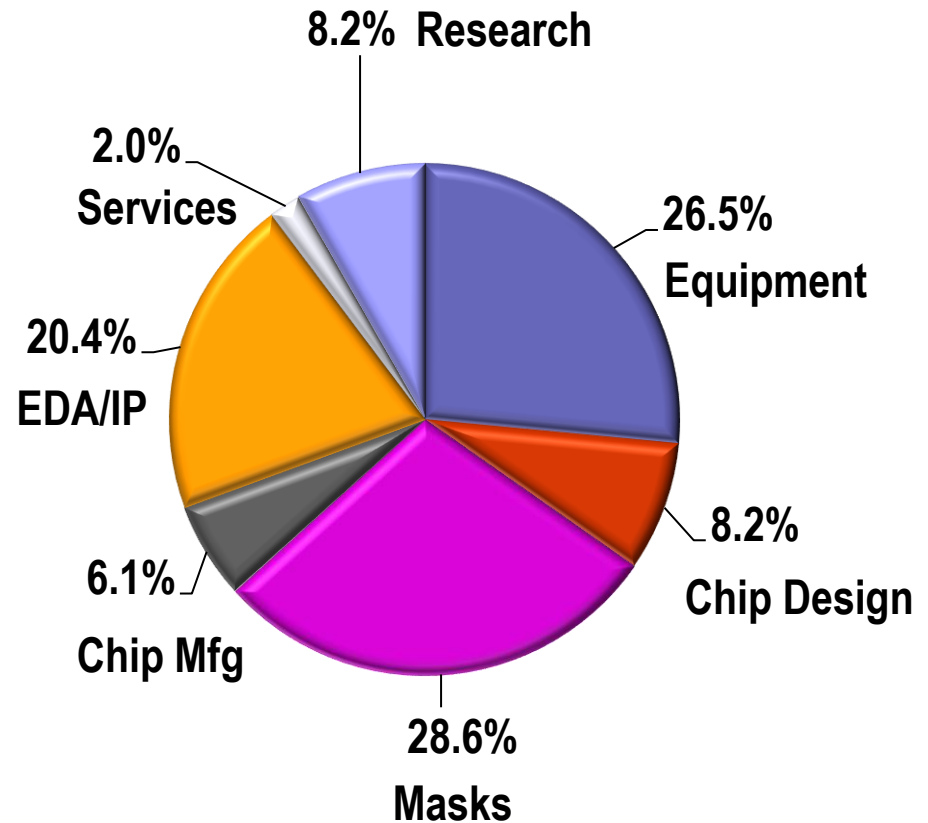


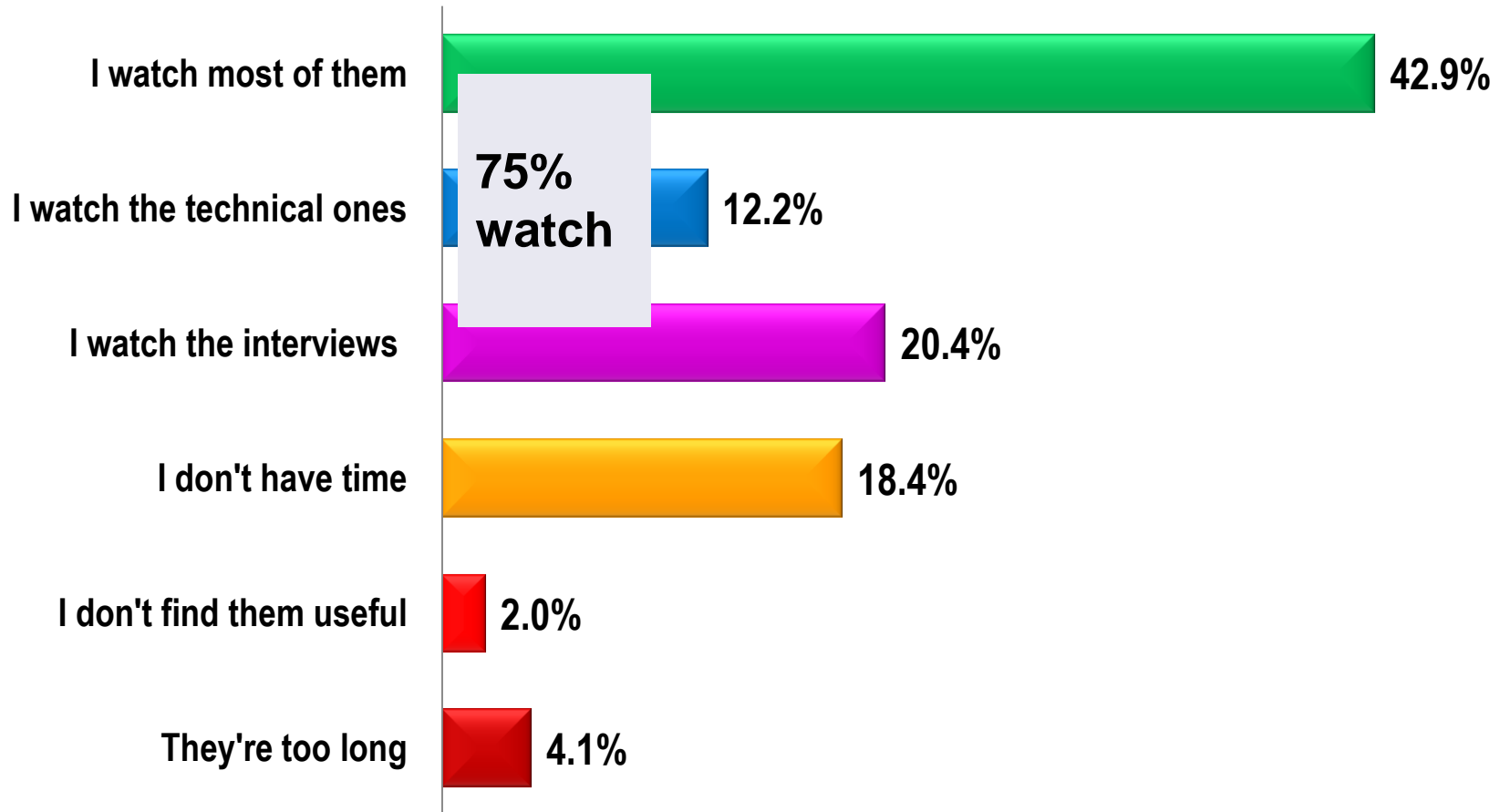
August 2013 eBeam Initiative Survey

Goals:

- Increase the voice of the eBeam community
- Two-way communication with members
- Thank you for your participation with 49 responses (n=49)



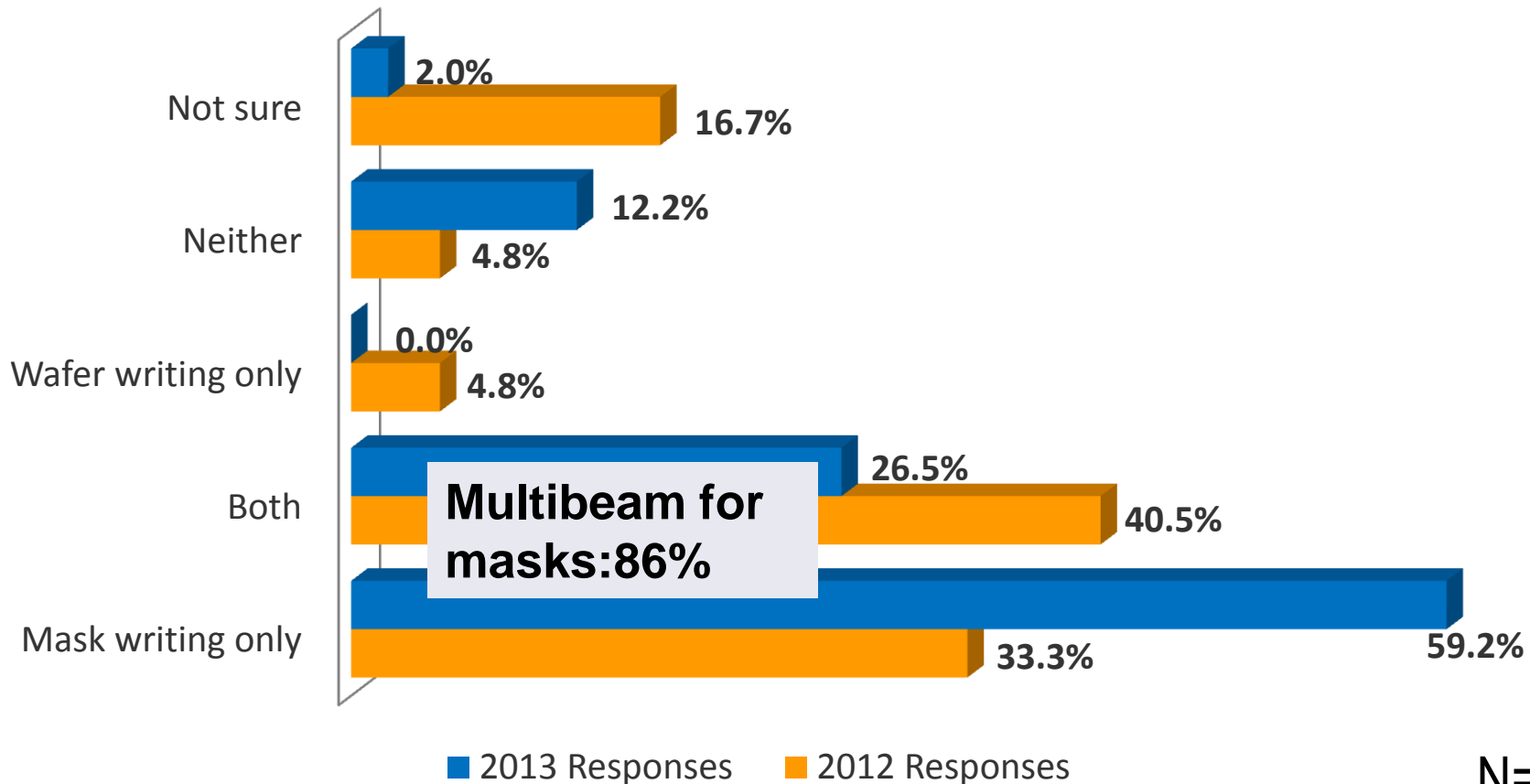
Thank you for watching the Fine Line



N=49

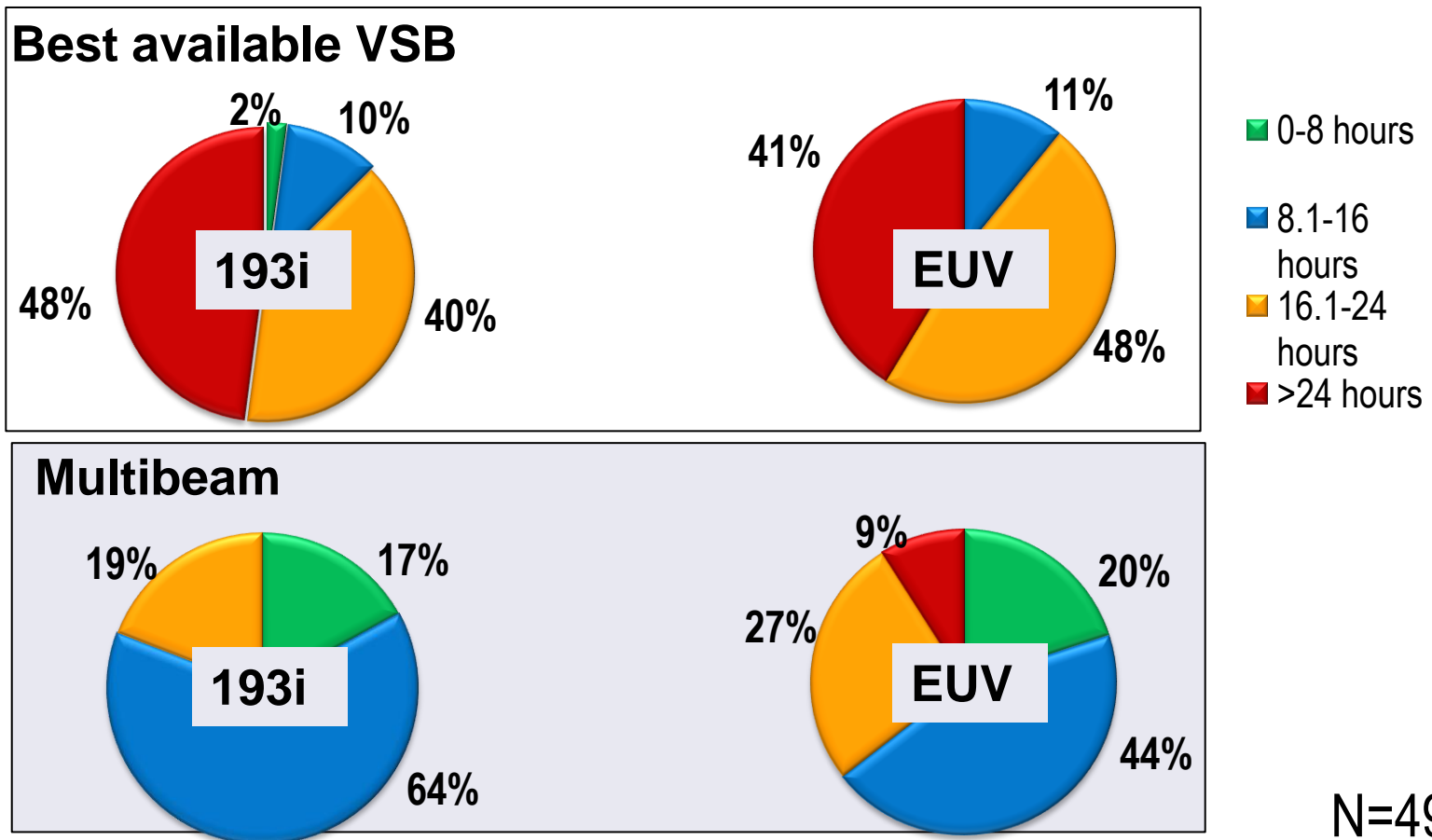
Multibeam for Mask Sentiment Increased

Q: Do you believe that multibeam technology will be used for mask or wafer writing production by 2016?



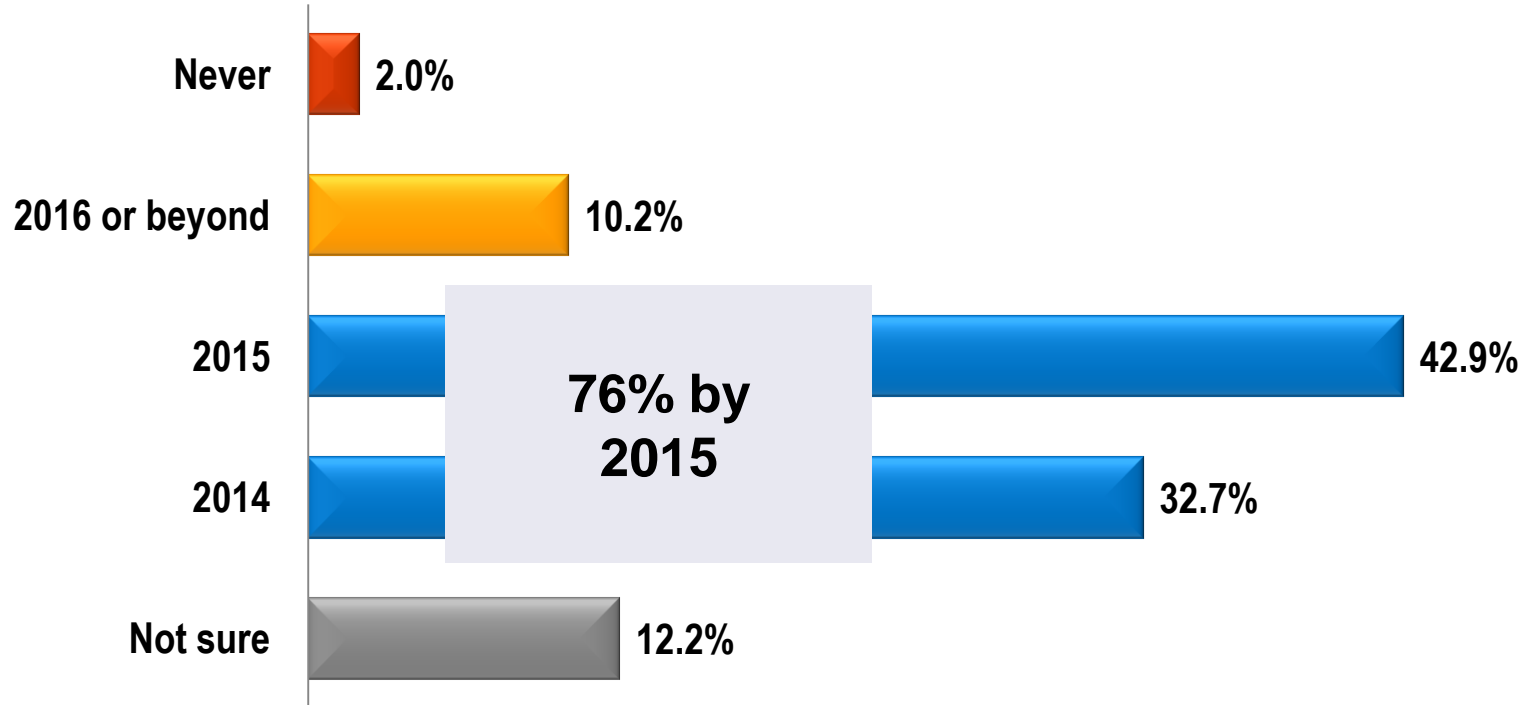
Multibeam Expected to Solve Write Times

Q: At 10nm, what is your prediction for mask write times?



Majority Predict Mask CDU Impact by 2015

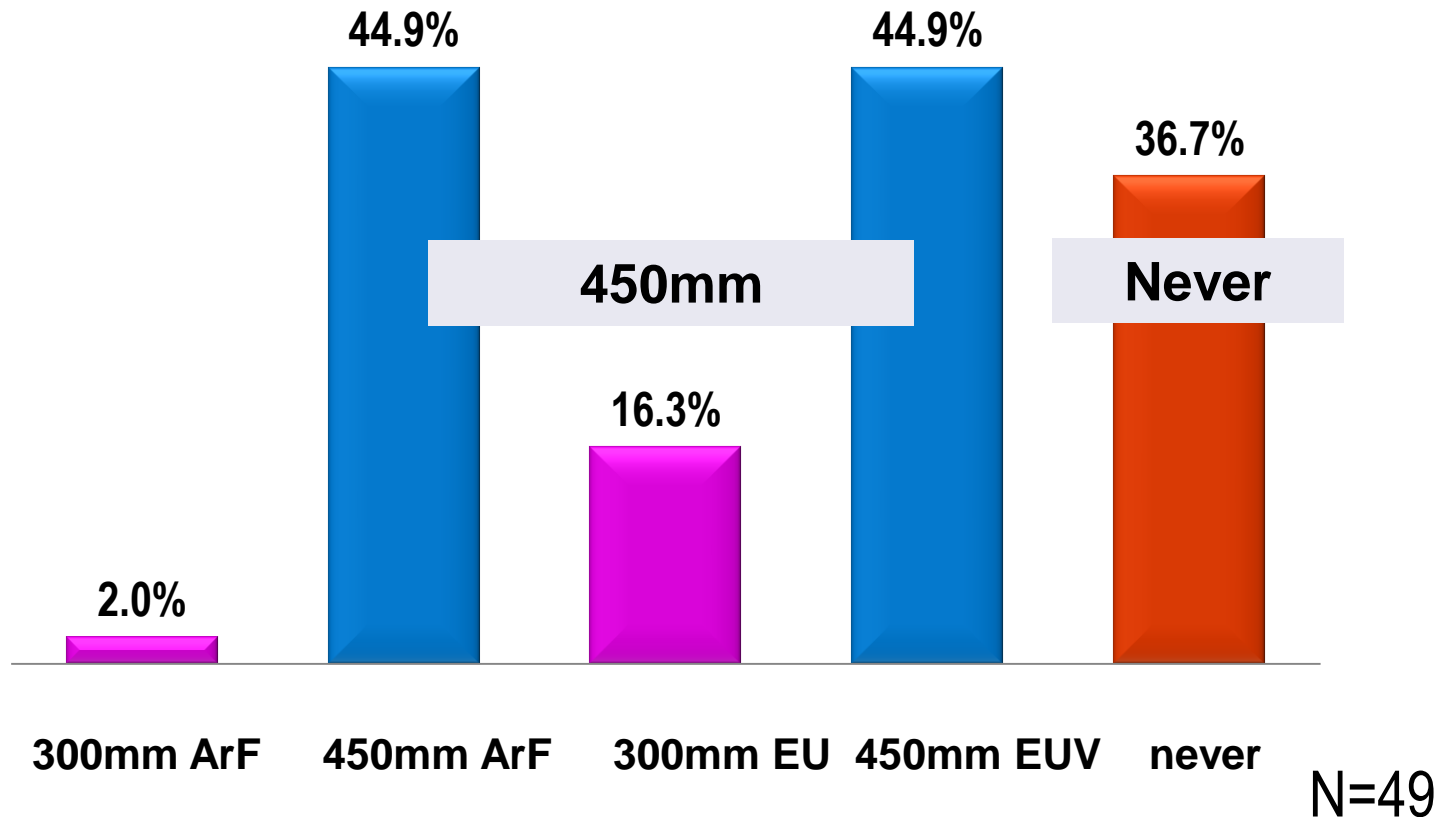
Q: When will changes need to be made to MDP in order to account for shape-dependent mask CDU?



N=49

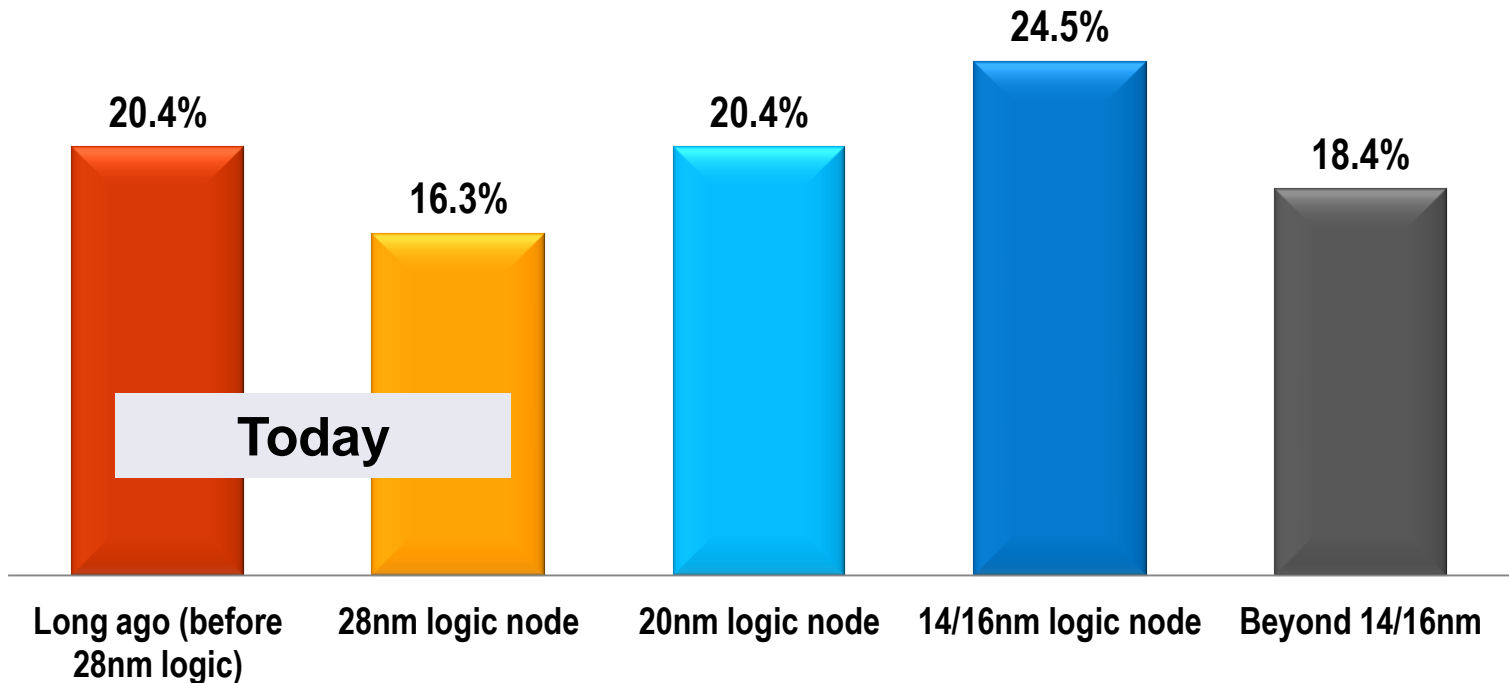
Different Views on Mask Sizes

Q: With which evolution of wafers do you think 8-inch or greater mask sizes will become a production need?



Mask Accuracy is an Issue Today

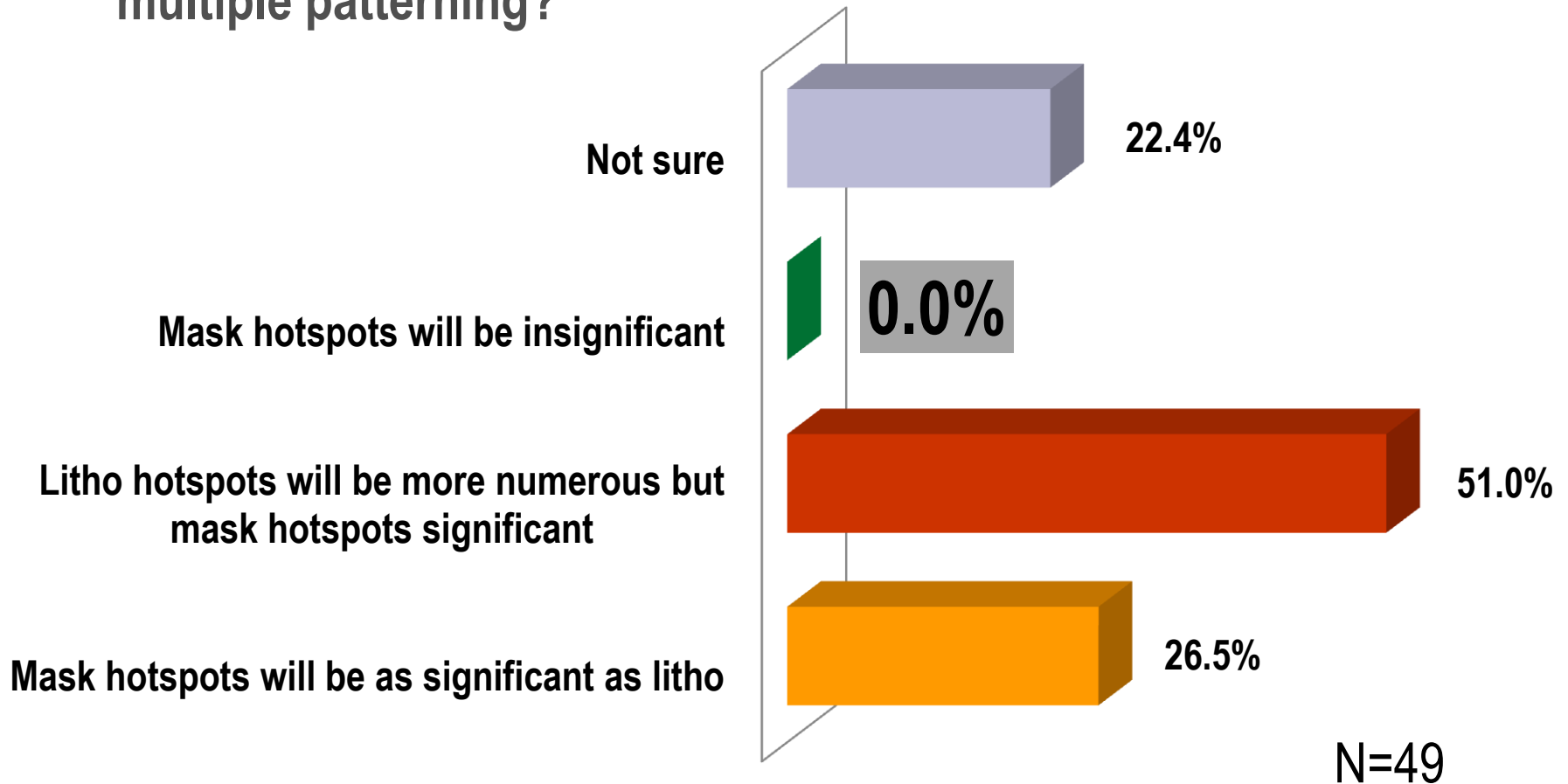
Q: When did you start – or do you anticipate – seeing mask hotspots as a significant issue?



N=49

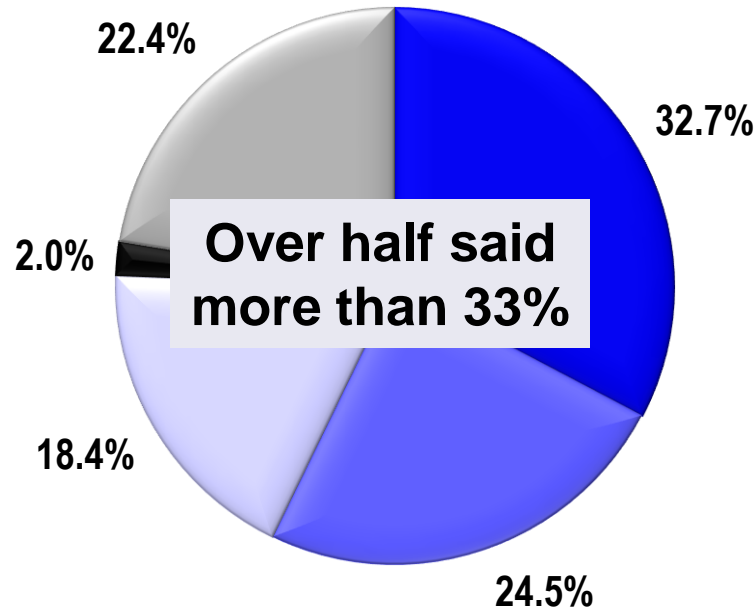
2020: Mask Hotspots *Significant*

Q: By 2020, what significance do you expect mask hotspots to have for critical layers processed by immersion lithography with multiple patterning?



2020: GPGPU Usage is Expected

Q: By 2020, what percentage of simulation-intensive applications in EDA will use GPUs?

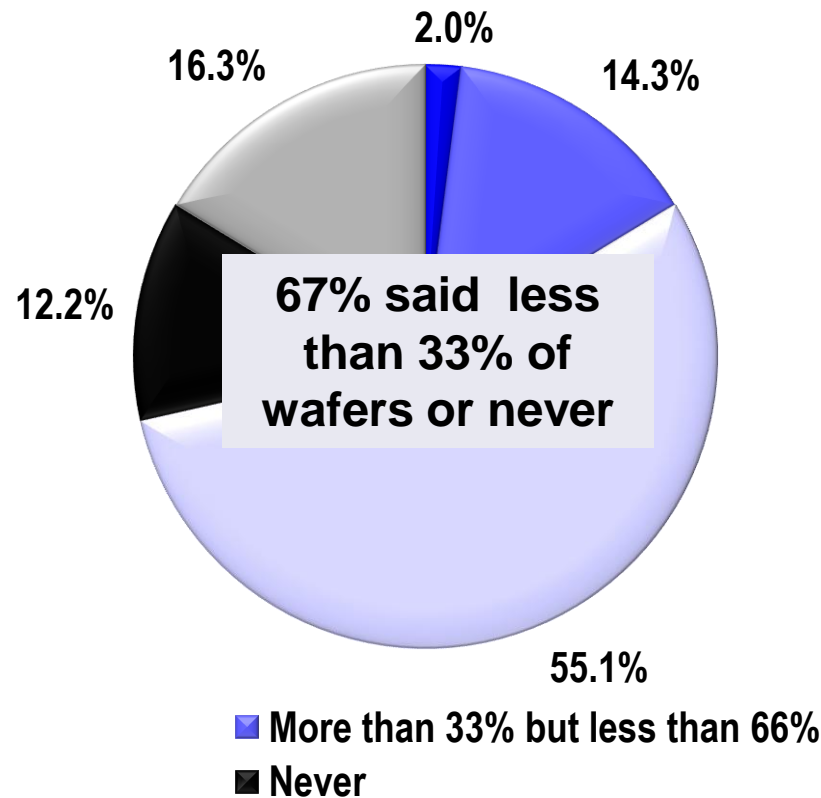


- More than 66%
- More than 33% but less than 66%
- Less than 33%
- Never
- Not sure

N=49

2020: Early Days for DSA Predictions

Q: By 2020, what percentage of wafers will be manufactured using at least one layer processed with DSA?



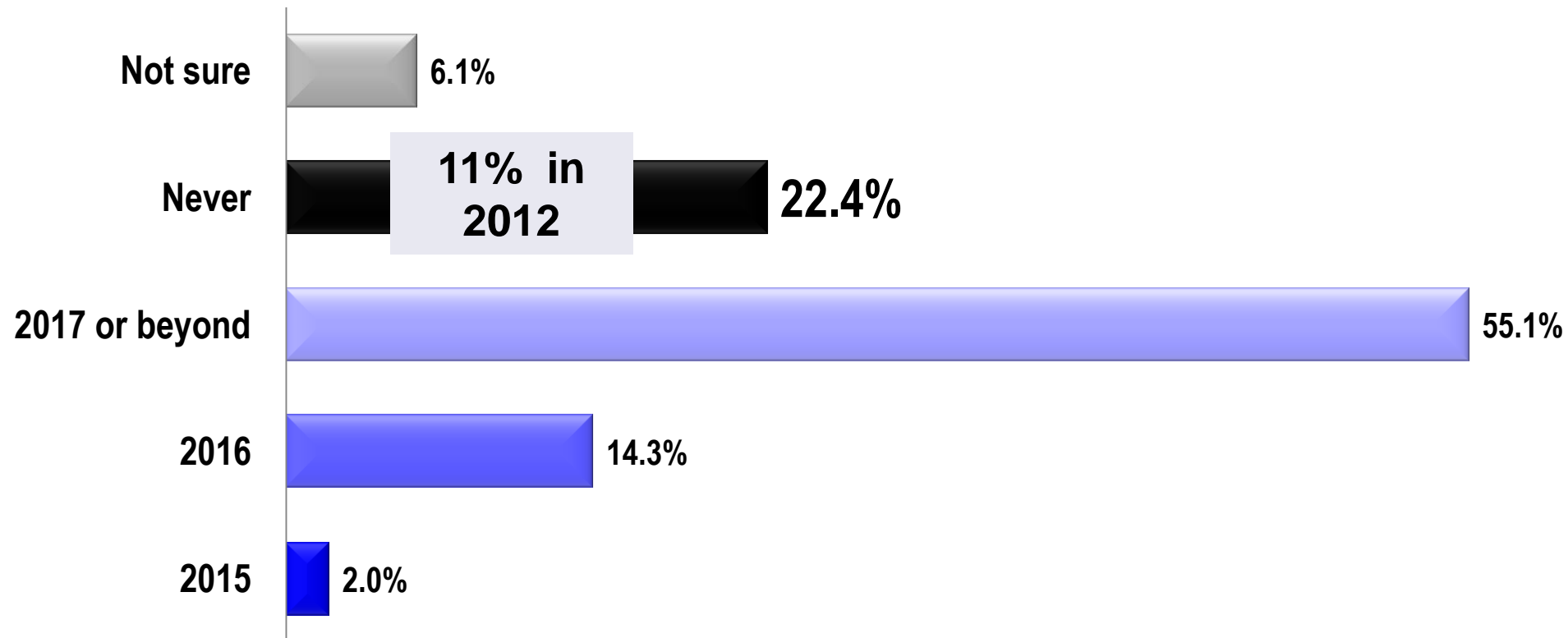
N=49

EUV Expectations Still Set in the Future



More than twice as many said “Never” vs 2012

Q: In what year do you predict EUV will be used in volume production for SoCs?



N=49

**Thank you to those
who participated in the
survey!**

**Feedback and questions for future
surveys welcome – send to
jan@williscalibra.com**
