

# NERC

NORTH AMERICAN ELECTRIC  
RELIABILITY CORPORATION

# Proposed ERO 2020 Work Plan Priorities

Mark Lauby, Senior Vice President and Chief Engineer  
Corporate Governance and Human Resources Committee Meeting  
February 5, 2020

RELIABILITY | RESILIENCE | SECURITY



1. Expand Risk-Based Focus in Standards, Compliance Monitoring, and Enforcement
2. Assess and Catalyze Steps to Mitigate Known and Emerging Risks to Reliability and Security
3. Build a Strong E-ISAC-Based Security Capability
4. Strengthen Engagement across the Reliability and Security Ecosystem in North America
5. Capture Effectiveness, Efficiency, and Continuous Improvement Opportunities

<b>2020 Key Objectives</b>	
1.	<p>Implement strategy for fuel assurance standards (including cold weather)</p> <ul style="list-style-type: none"> <li>• For Bulk Power System Operations:               <ul style="list-style-type: none"> <li>• Complete the development and submit to FERC a Board approved standard focused on resource availability in the operational timeframe</li> </ul> </li> <li>• For Bulk Power System Planning:               <ul style="list-style-type: none"> <li>• Fuel Assurance Guideline approved</li> <li>• Identify tools needed for planners to include fuel scenarios, and work with industry to develop them</li> <li>• Identify design basis scenarios for use in the planning horizon</li> <li>• Begin enhancement of NERC’s Transmission Planning (TPL) Standards to include fuel scenarios for normal and extreme events (2021-2022)</li> </ul> </li> </ul>
2.	<p>Complete the recommendations in the Supply Chain report;</p> <ul style="list-style-type: none"> <li>• Implement Supply Chain recommendations, including assessment of the CIP bright-line criteria (High, Medium, &amp; Low)</li> <li>• Work with industry to develop consistency and certainty in vendor audits</li> </ul>
3.	<p>Consistently embed internal control activities within the compliance monitoring program</p>

<b>2020 Key Objectives</b>	
1.	<p>For each of the following, identify performance trends and develop lessons learned, recommendations, and/or implement mitigations:</p> <ul style="list-style-type: none"> <li>• Protection system misoperations</li> <li>• Reduced situational awareness from loss of Energy Management Systems</li> <li>• Unacceptable inverter performance</li> <li>• Increased amounts of distributed energy resources</li> <li>• Reduce potential for the BES initiating wildfires</li> </ul>
2.	<p>Implement two lessons learned and best practice from Grid EX V including improved use and collaboration with SAFNRv3:</p> <ul style="list-style-type: none"> <li>• Two communication drills between EISAC Watch floor and BPSA</li> <li>• Four drills on developed use cases</li> </ul>
3.	<p><b>Grid Transformation:</b> Identify and assess the following emerging factors impacting BPS reliability and make recommendations for their mitigation:</p> <ul style="list-style-type: none"> <li>• Assess energy adequacy in the 2020 Long Term Reliability Assessment</li> <li>• Technical assessment on energy storage technologies, applications, &amp; projections</li> <li>• Develop position paper on the ERO's role to ensure BPS reliability with increased distributed energy resources lower than BES thresholds</li> <li>• Develop data requirements and metrics for quantifying BPS resilience and recovery</li> <li>• Improve models, identify simulation needs, and provide guidance to address reliability considerations from DER penetration</li> <li>• Begin addressing cybersecurity risks in the planning and operational time horizon</li> </ul>

<b>2020 Key Objectives</b>	
1.	<p><b>Strategy:</b></p> <ul style="list-style-type: none"> <li>• Complete Strategic Plan refresh with support of MEC</li> <li>• Complete development of performance management process driven by agreed metrics</li> </ul>
2.	<p><b>Information Sharing:</b></p> <ul style="list-style-type: none"> <li>• Increase overall information sharing by partners and industry through targeted outreach</li> <li>• Expand CRISP participation and capture the DOE “+ 30” opportunity</li> <li>• Improve coordination and connectivity to Intelligence Community, especially DOE/CESER, DHS/CISA, and DOD/NSA</li> <li>• Effectively activate existing MOU-based relationships (MS ISAC, DNG ISAC, IESO pilot)</li> <li>• Expand Watch Operations to 24x7</li> </ul>
3.	<p><b>Analysis:</b></p> <ul style="list-style-type: none"> <li>• Increase member shared joint analytical products developed with partners</li> <li>• Increase member shared content enriched by E-ISAC analysis</li> <li>• Unclassified Threat Workshop survey results (relevant, unique, timely, actionable content)</li> <li>• Implement long term data platform and demonstrate value-add</li> </ul>
4.	<p><b>Engagement:</b></p> <ul style="list-style-type: none"> <li>• Continue to expand participation in Industry Engagement Program</li> <li>• Institutionalize Canadian engagement effort and ensure value add across international border</li> <li>• Implement and realize value from new CRM system</li> <li>• Continue to grow GridSecCon and evaluate outsourcing potential for low value added work</li> </ul>

**2020 Key Objectives**

1. Expand outreach/coordinated ERO Enterprise communications with stakeholder/policy organizations
  - Enhance existing and establish new relationships with key industry associations and stakeholder organizations
  - Develop a coordinated approach for NERC’s and Regional Entities’ outreach to FERC
  - Leverage Regional Entities for engagement with state entities and organizations
  - Expand coordinated outreach to Canada related to MOUs as well as regulatory authorities
  - Gain support for recommendations in NERC’s reliability assessments
2. Work with ERO Enterprise Communications Group (EROCG) to refine and further develop the *ERO Enterprise Strategic Communication Plan*, to:
  - Enhance sharing platforms and vehicles for ERO Enterprise projects
  - Amplify initiatives and messages through expanded use of social media
  - Support the ERO EC pledge to develop and share harmonized messaging across the ERO Enterprise
3. Plan, resource, and execute joint meeting and conferences where possible
  - Joint Regional Entity supported Human Performance conference with NATF
  - Resiliency Summit with NATF and EPRI
  - Storage and Frequency Response with NAGF
  - Regional Entity focused Supply Chain and Facility Rating conferences and best practices with NATF
4. Support corollary activities within industry and trades, e.g. U.S. DOE’s North American Energy Resilience Model (NAERM), IEEE Standard 2800

2020 Key Objectives	
1.	<p>Complete the “Big 3”</p> <ul style="list-style-type: none"> <li>• Roll-out Align Release 1.0, supported by stakeholder outreach and education, end-use training, and business unit readiness activities</li> <li>• Complete the CIP and Phase II of the O&amp;P Standards Efficiency Reviews</li> <li>• Successful implementation of the Reliability and Security Technical Committee (RSTC)</li> </ul>
2.	<p>ERO Enterprise Biennial Effectiveness Survey</p> <ul style="list-style-type: none"> <li>• Implement plans addressing key 2018 findings</li> <li>• Rethink the biennial survey working with the CCC</li> </ul>
3.	<p>NERC</p> <ul style="list-style-type: none"> <li>• Finish 2020 at or below budget and maintain at least \$3MM in operating reserves</li> </ul>
4.	<p>Regional Entities</p> <ul style="list-style-type: none"> <li>• With Regional Entity and stakeholder feedback, continue evaluation of compliance monitoring and enforcement processes for efficiency</li> <li>• Implement opportunities to centralize and/or standardize processes</li> </ul>
5.	<p>ERO Enterprise</p> <ul style="list-style-type: none"> <li>• Transformation achieves process alignment and shared resources</li> </ul>



# Questions and Answers



# NERC

NORTH AMERICAN ELECTRIC  
RELIABILITY CORPORATION

# 2019 ERO Work Plan Priorities Year-End Report

Mark Lauby, Senior Vice President and Chief Engineer  
Corporate Governance and Human Resources Committee Meeting  
February 5, 2020

**RELIABILITY | ACCOUNTABILITY**



1. Risk-responsive Reliability Standards
2. Objective, risk-informed entity registration, compliance monitoring, mitigation, and enforcement
3. Reduction of known reliability risks
4. Identification and assessment of emerging reliability risks
5. Identification and reduction of cyber and physical security risks
6. Improving ERO Enterprise efficiency and effectiveness



The goal has been fully achieved



The goal has been partially achieved and is on track for 2019 completion



The goal has been partially achieved but is off schedule for 2019 completion



The goal will not be reached in 2019 or the goal no longer applies

## Sub Goals

1. Complete Phase I of the Operating and Planning Standards Efficiency Review and seek FERC approval for sought after retirements.
2. Launch Phase II of the O&P Standards Efficiency Review
3. Initiate CIP Standards Efficiency Review and establish a process and timeline
4. Complete Supply Chain effort
  - Complete the final report and gain Board acceptance
  - Develop a plan to realize the recommendations in the report
  - Begin Plan Implementation
  - Develop a plan to evaluate the effectiveness of the supply chain standard



- Completed and filed with FERC on 6/7/2019



- Completed – Phase II Launched Q 1



- Completed. Project initiated and timeline established



- Report accepted by BOT; SAR submitted and project initiated; Plan to evaluate effectiveness presented to Board in December

## Sub Goals

1. Complete certification and registration of the new Western Reliability Coordinators on-time, consistent with dissolution of Peak Reliability.
2. Review effectiveness of the Compliance Guidance program and develop plan to enhance; and evaluate opportunities to expand industry-led development of guidance to other program areas.
3. Provide training and education on control evaluations to industry with supporting guidance to the Regional Entities for consistent implementation in audits.
4. Improve alignment in processes across Regional Entities and when appropriate, memorialize the aligned processes into CMEP Tool design.



- RC transition completed in Q4



- Survey for participants conducted Q3 2019
- Review and Plan to enhance developed in Q4



- RE training provided April
- Industry training provided at Standards and Compliance Workshop July



- Business processes harmonized for Align
- Compliance Oversight Plan guidance/tools enhanced
- CIP Evidence Tool revised

## Sub Goals

1. For the following BPS reliability risks identify the extent of condition, develop plan, and mitigate impacts from:
  - Protection system misoperations
  - Unacceptable inverter performance
  - Increased dependency on natural gas
  - Compromised situational awareness from the loss of Energy Management Systems
  - Distributed energy resources

Identification and syndication of best practices through new Reliability Guidelines and other tools, including enhancements to Reliability Standards.

2. Finalize business case and begin implementation of new SAFNR Tool



- **Complete:**
  - 2019 SOR
  - DER-A Model Reliability Guideline – Distributed through NARUC to reach state-level
  - IBR Performance Reliability Guideline
  - EGWG Formed
  - Monitoring and Situation Awareness Conference
  - Fuel Assurance Guideline – Comment Period Complete
  - 2020 LTRA



- Implementation complete

## Sub Goals

1. Develop and implement a plan to expand the consistent use of probabilistic based assessment processes for reliability assessments with common tools and practices.
2. Expand the 2020 Long Term Reliability Assessment to include considerations of energy assurance risks.
3. Scope out options and determine if work should be undertaken on the use of reserve margin targets given:
  - changing level of resource firmness,
  - uncertainty around actual loads due to DER expansion, and
  - recent experiences at managing tight reserve margins without incident.



- Probabilistic Assessment Working Group Technical Reference Document developed



- 2020 Probabilistic Assessment included in 2020 LTRA



- 2019 Summer and Winter Assessments
- 2019 Long-Term Reliability Assessment
- Analysis on recent observations in Texas, California, and New England

## Sub Goals

### 1. Information Sharing:

- Enhance data collection capabilities
- Establish two way sharing of machine readable cyber indicators through the Cyber Automated Information Sharing System
- Implement E-ISAC Watch 24 hours/5 days per week by executing hiring plan

### 2. Analysis: Increase the identification of indicators of compromise

### 3. Engagement:

- Expand the Industry Engagement Program (IEP) and host minimum of 6 IEP sessions
- Execute Canadian Engagement Strategy, and gain Canadian support for 2020 Business P&B
- Develop plans to address key findings identified in the 2018 biennial Effectiveness Survey
- Design and execute GridEx V



- 3 Information Sharing Agreements this year
- CRISP expanded by 16 participants/new software
- Two way sharing of machine readable cyber indicators
- 24/5 launched in November



- Identification of indicators of compromise increased in 2019; > 600 through November



- 6 IEP sessions in 2019
- Canadian Engagement Strategy Executed
- Plans developed and documented to address 2019 Effectiveness Survey
- GridEx V Nov 13, 14, 2019 successfully executed



## Sub Goals

### 1. NERC:

- Develop and implement meeting and travel policy to support NERC stakeholder groups
- Finish the 2019 year at or below budget and maintain at least 3 MM in operating reserves
- Develop plans to address key findings from the 2018 biennial Effectiveness survey
- Work with MEC to develop metrics measuring the effectiveness of the E-ISAC

### 2. ERO Enterprise Coordination initiatives:

- Meet all milestones on CMEP tool development
- Evaluate opportunities to centralize and/or standardize processes
- Develop and implement meeting and travel policy for ERO Enterprise Working Groups

### 3. Stakeholder Engagement:

- Develop and implement plan to reconceive technical committees to a lower cost model that preserves/improves effectiveness



- Meeting and Travel Policy
- Effectiveness Survey
- At its October 2019 meeting, the ESCC Members Executive Committee endorsed an updated and much improved set of 2020 performance metrics for the E-ISAC.



- CORES -a managed launch is in progress for select registered entities before full release.
- **Align release 1 paused**
- Meeting and travel policy developed



- Reliability and Security Technical Committee



# Questions and Answers

# NERC

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## Board Self-Assessment and MRC Assessment of Board of Trustees Effectiveness Results

Prepared by Survey Design & Analysis

RELIABILITY | RESILIENCE | SECURITY



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# Objectives & Methods

- To assess the performance and effectiveness of the NERC Board of Trustees (Board).
- NERC engaged SDA to design a new assessment questionnaire for 2018. The topics were the same but questions were modified and rating scales changed. That same survey was run again in 2019.
- The assessment has 28 questions (see appendix) to be answered by Board members, 22 of which are also answered by MRC members.
- 11 out of 11 Board members participated in the assessment. 24 out of 24 MRC members participated, for a response rate of 100%.

- Breakouts (MRC vs. Board) are shown only when differences are significant. Significant differences exist between Board and MRC members for most questions, those questions with no significant differences are indicated as such.
- For this report “Effectiveness Level” is defined as the percent of respondents selecting “Very effective” or “Effective;” the top two boxes of the 5-point effectiveness scale.
- For this report “Satisfaction Level” is defined as the percent of respondents selecting “Very satisfied” or “Satisfied;” the top two boxes of the 5-point satisfaction scale.
- For this report “Agreement Level” is defined as the percent of respondents selecting “Strongly agree” or “Agree;” the top two boxes of the 5-point agreement scale.
- Section summary measures include only those questions using a 5-point scale. This includes all questions except the questions that ask about the amount of Board involvement.



# Executive Summary



## Positive Highlights

- Excellent response rate as in past years: Board, 100% (10 of 10); MRC, 100% (24 of 24).
- Board and MRC members show commitment to the process by providing thoughtful comments, a total of 129 (up from 72 in 2018) in all, many with suggestions for the Board.
- In general, Board ratings are more modest of themselves while MRC ratings of the Board are improved.
- The Board was seen as clearly effective in their overall function. They received overall effectiveness levels of 100% by the Board and 96% by MRC.
- 88% of Board and MRC members rate the Board's involvement in NERC's CEO's day-to-day management as "About the right amount".
- 92% of MRC (up from 85%) feel the Board listens to their input.

## **Potential Focus Areas (based on scores and analysis of verbatim comments):**

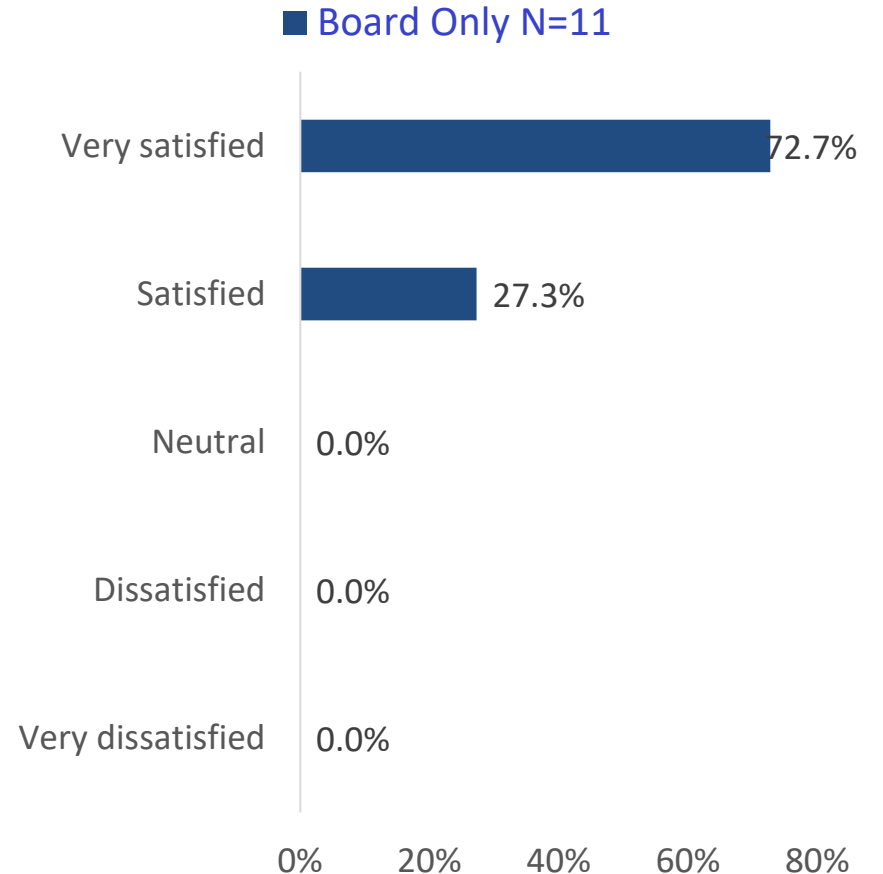
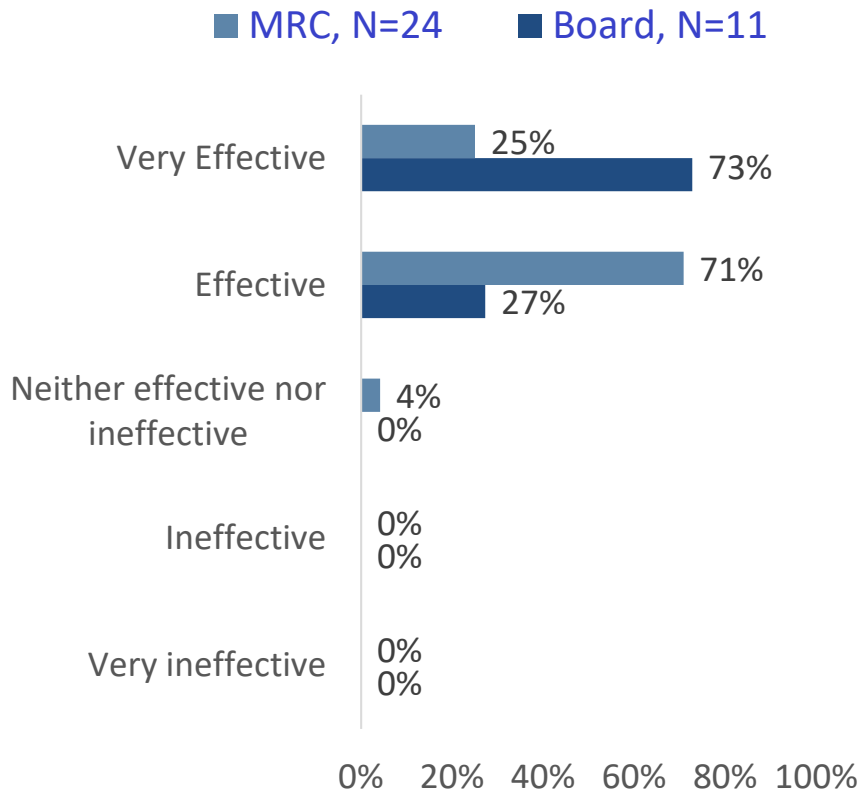
- Board should increase focus on Standards and Compliance and Enforcement Programs.
- Board should continually assess E-ISAC effectiveness as the program functions evolve.
- Board should continually assess efficiency and effectiveness of meetings and stakeholder engagement.
- Board should continue focus on FERC, State and Provincial Regulators relationships.



# Overall Effectiveness

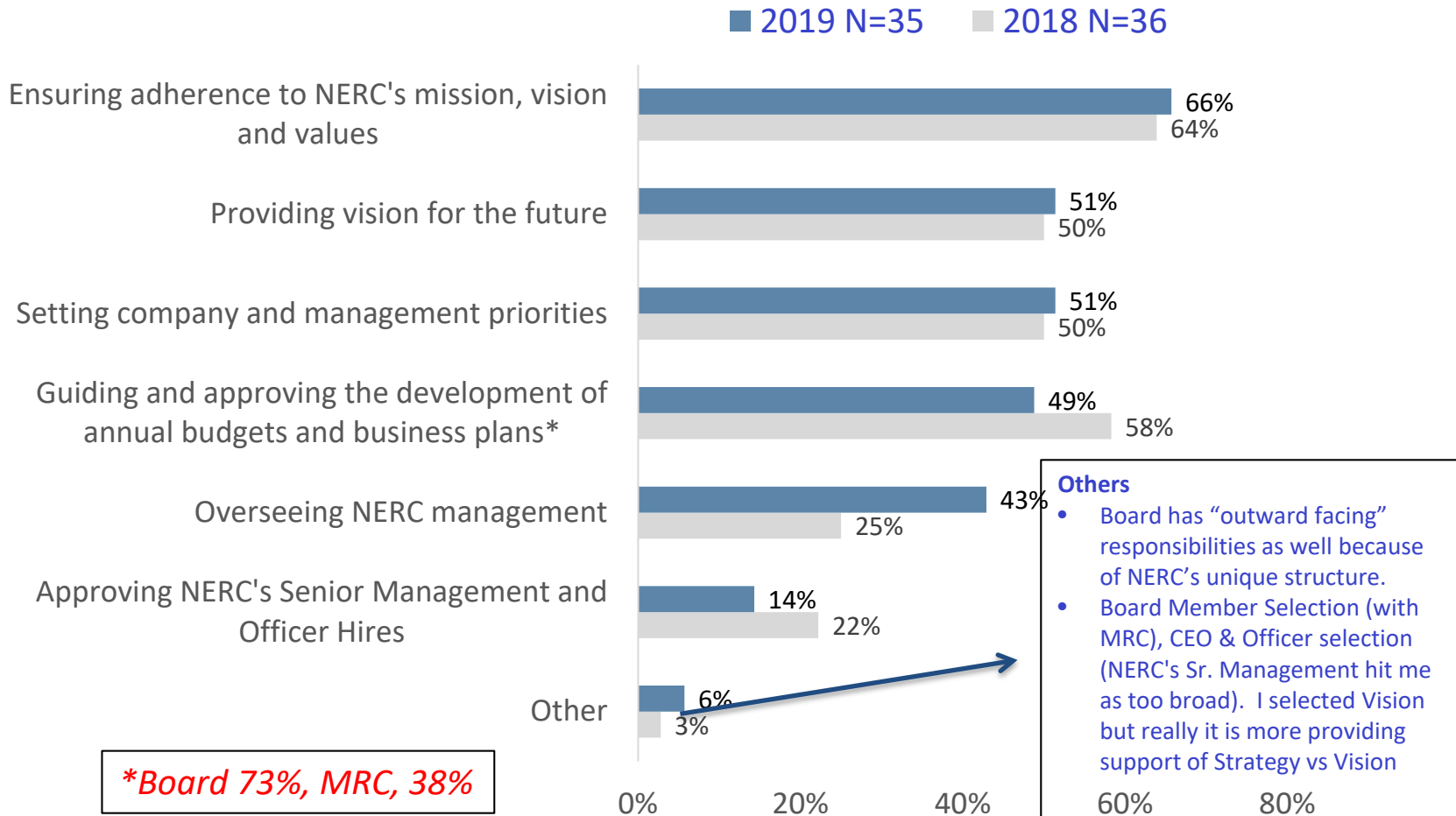
*Overall, how effective is the Board of Trustees at performing their responsibilities?*

*Overall how satisfied are you personally with the job you do working on the Board of Trustees?*



# Most Important Board Functions

*What are the Board of Trustees' MOST important functions at NERC? [Select No More Than 3]*

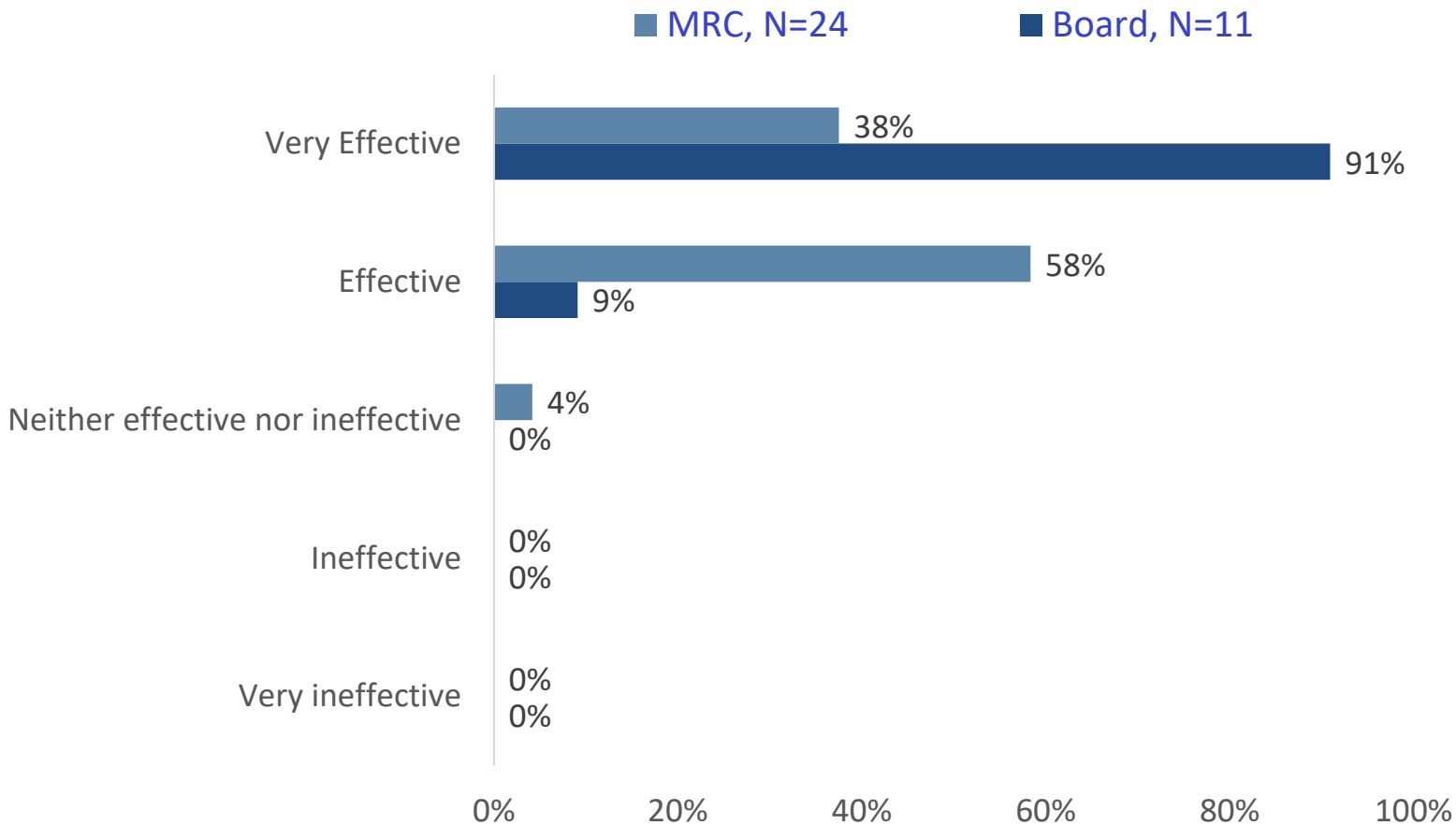




# Strategy

# Board Oversight on Plans & Budget

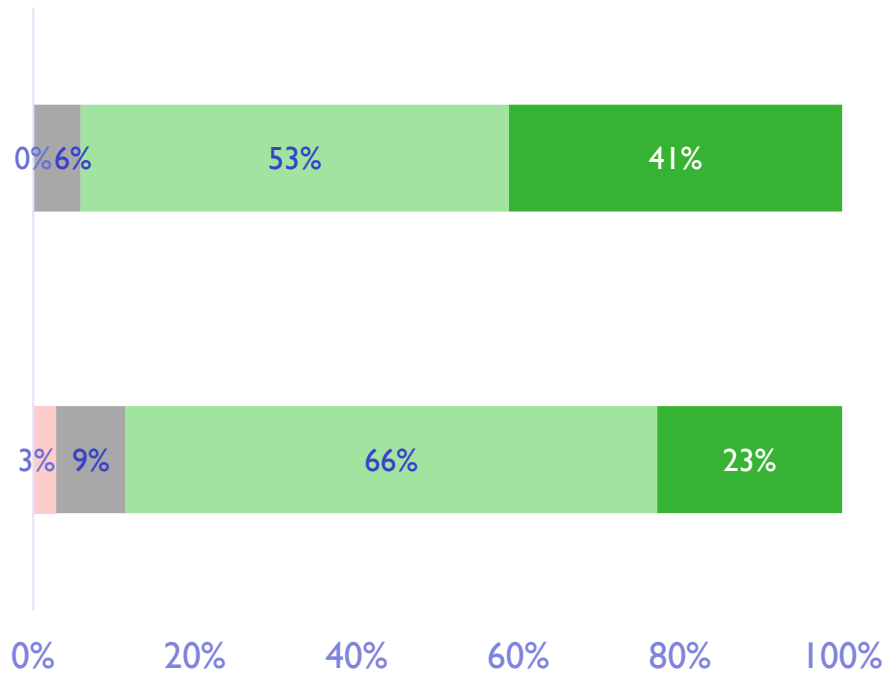
*Please rate the Board's effectiveness in overseeing NERC Management or staff to produce a final annual business plan and budget.*



*Please rate how effective the Board of Trustees is at each of their following functions:*

■ Ineffective\*   
 ■ Neither effective nor ineffective   
 ■ Effective   
 ■ Very effective

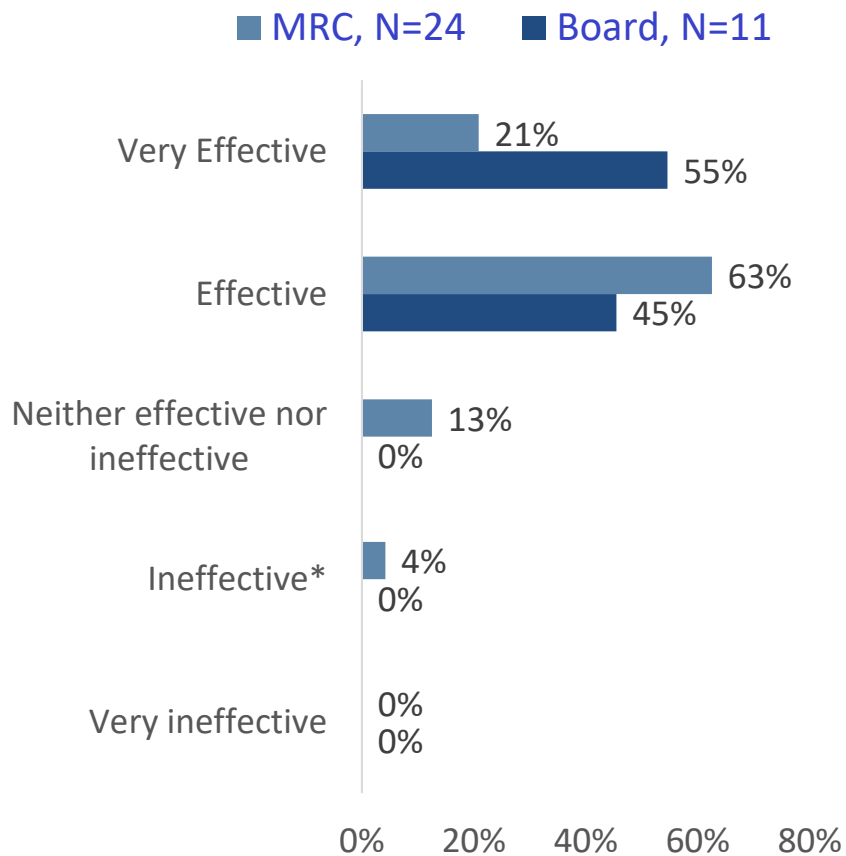
**Incorporating the international charter of the North American bulk power system N=34**



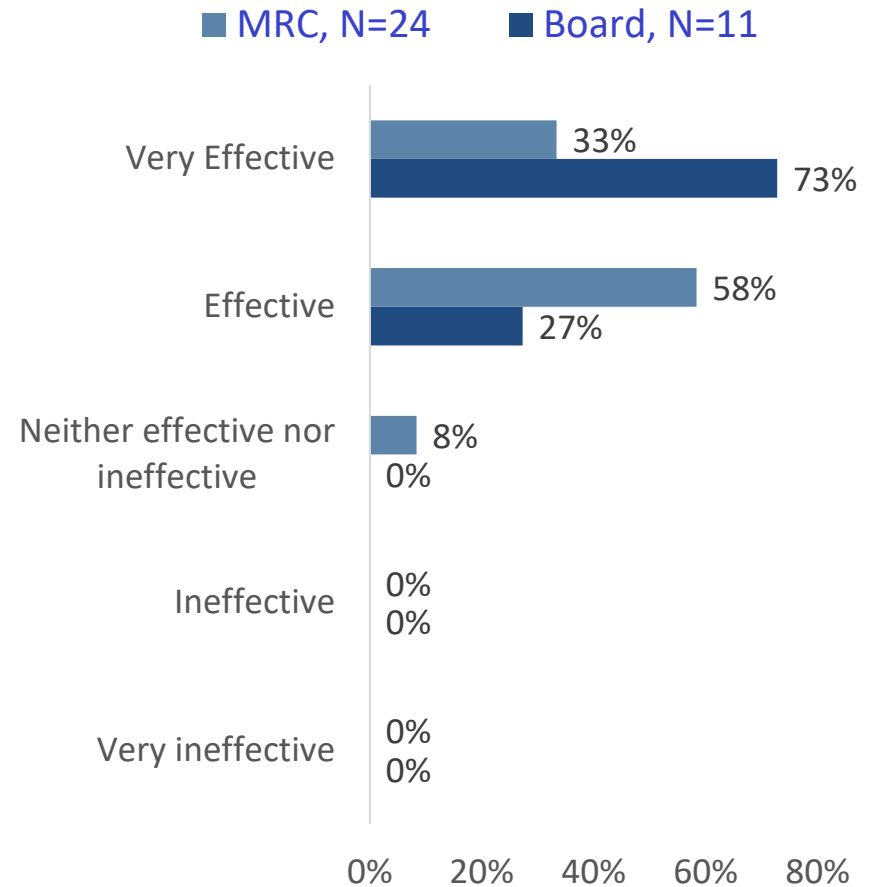
**Board and MRC together.**



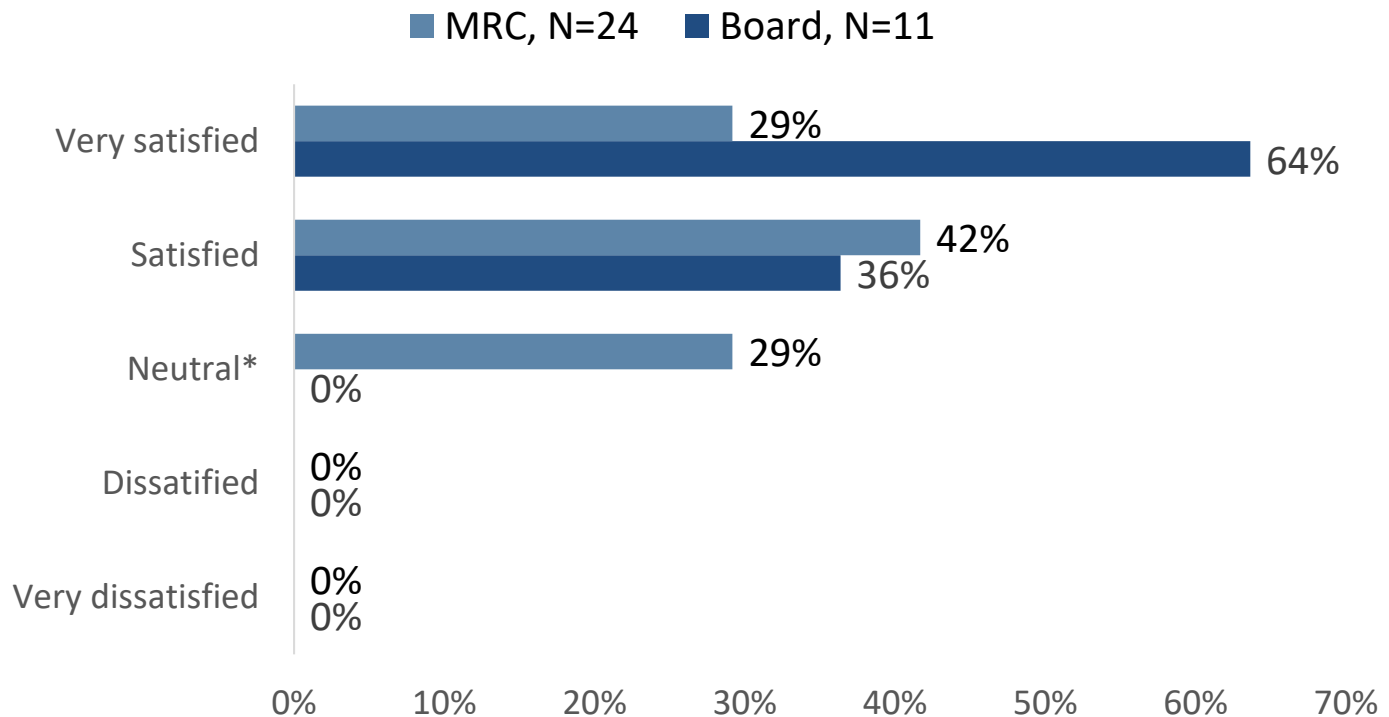
## Setting company and management priorities.



## Providing Leadership.

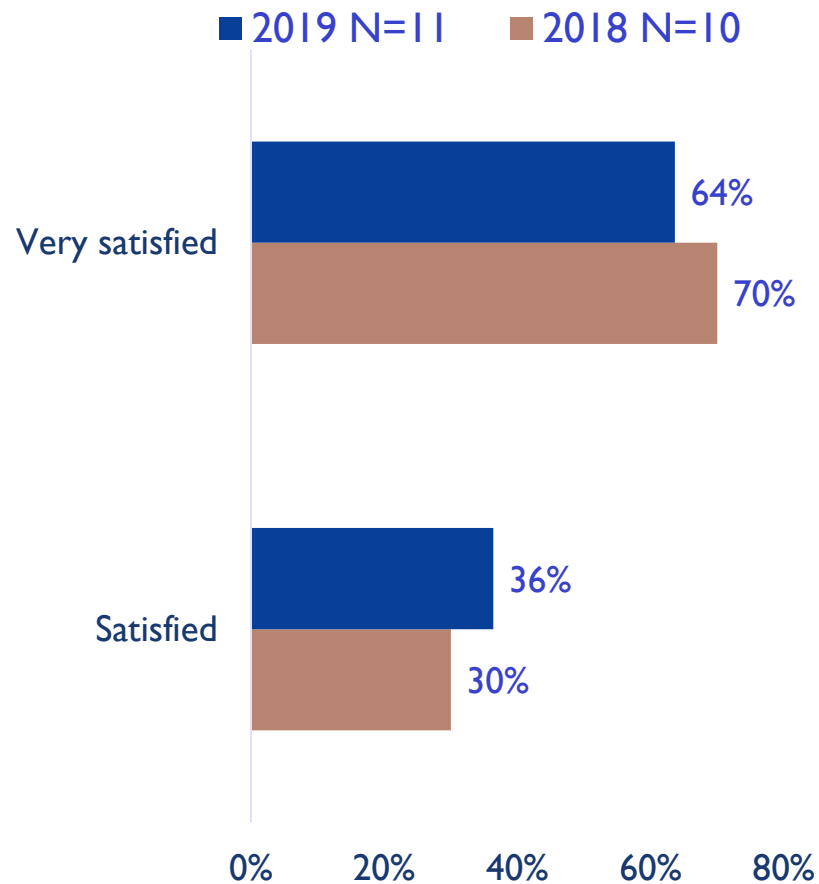


*How satisfied are you with how the Board incorporates advice and/or recommendations from the MRC?*

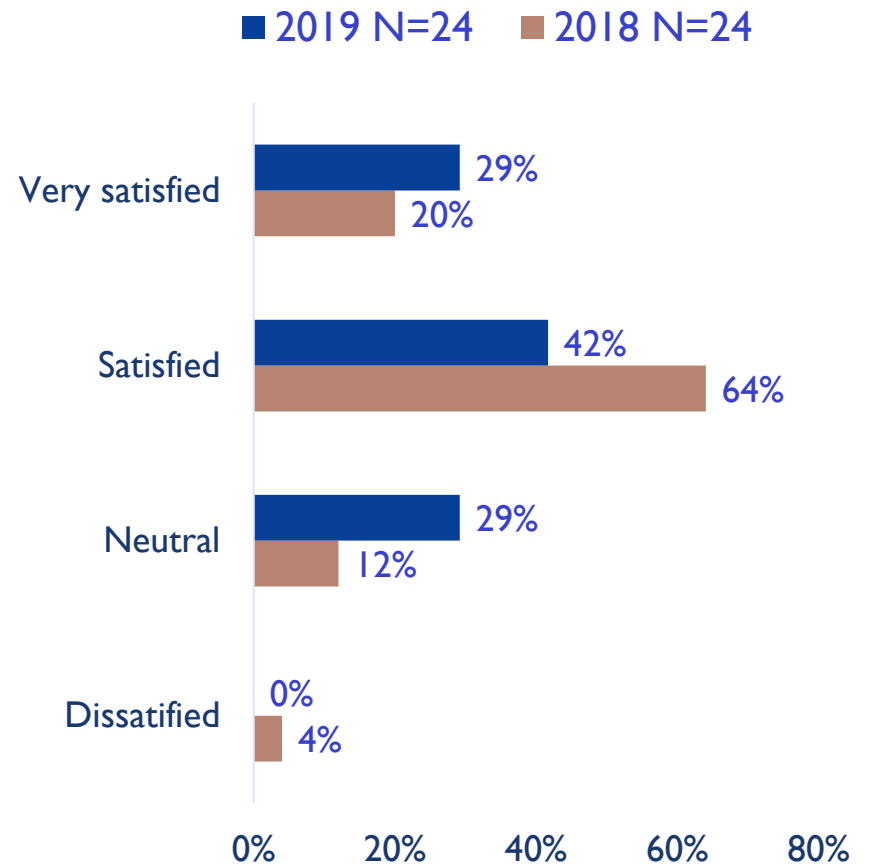


*How satisfied are you with how the Board incorporates advice and/or recommendations from the MRC?*

*Board – 2019 versus 2018*



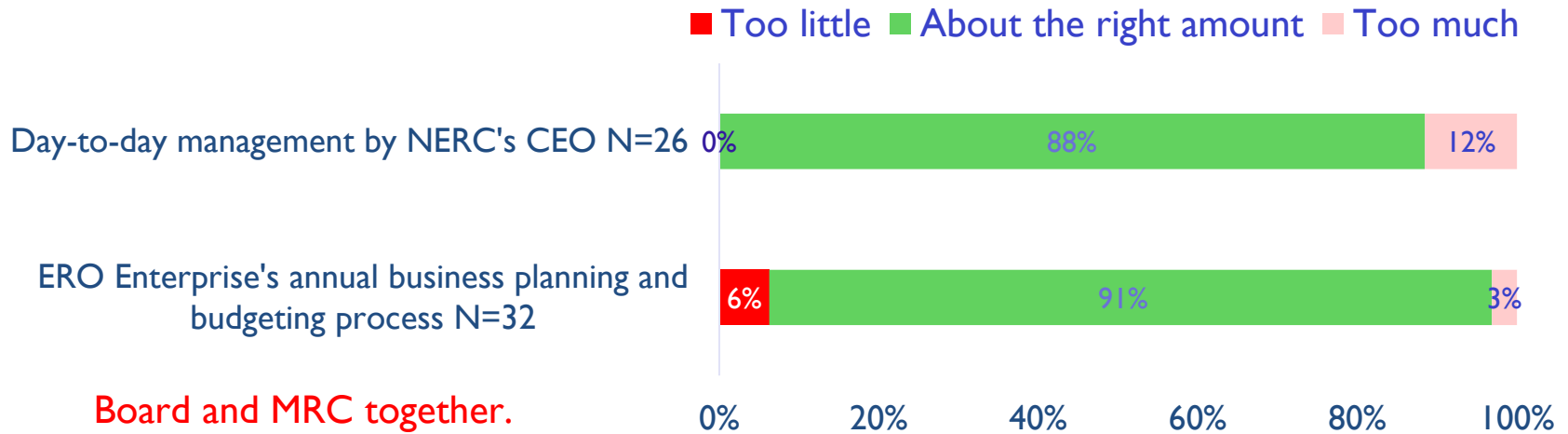
*MRC – 2019 versus 2018*



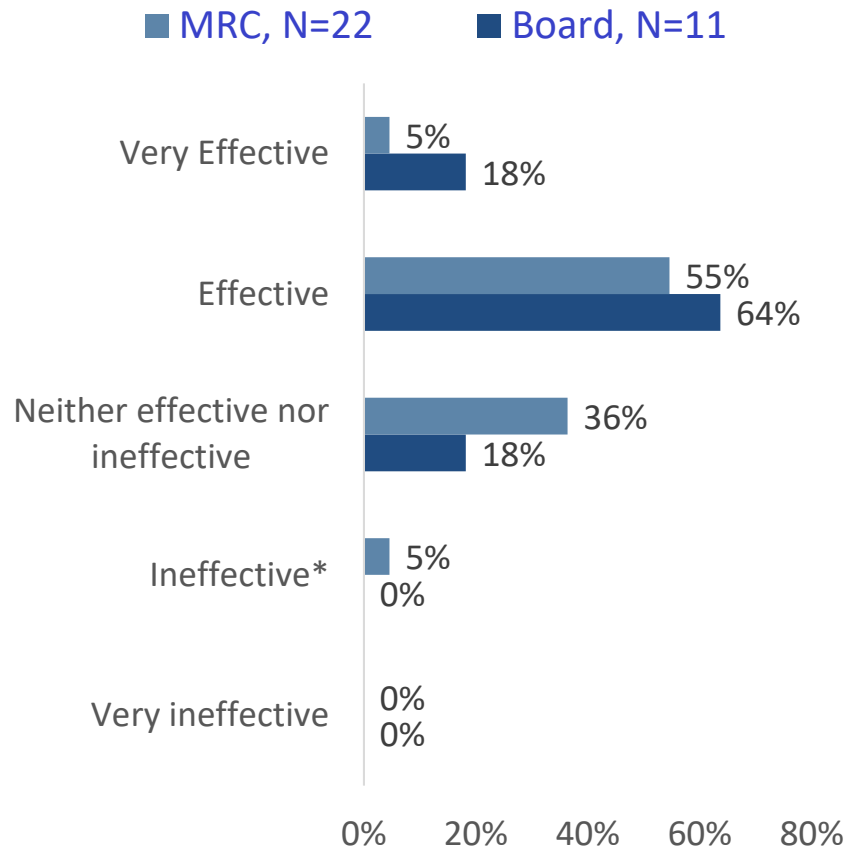


# Oversight

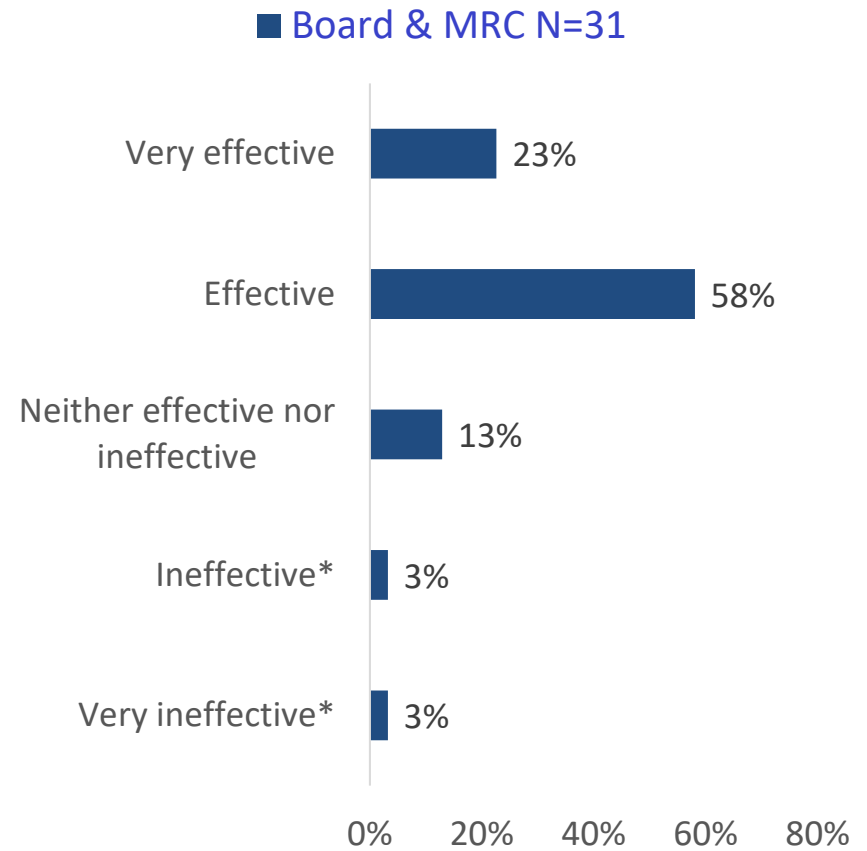
*Please rate the amount of involvement the Board has in each of the following:*



## Efficiency of ERO Enterprise Processes

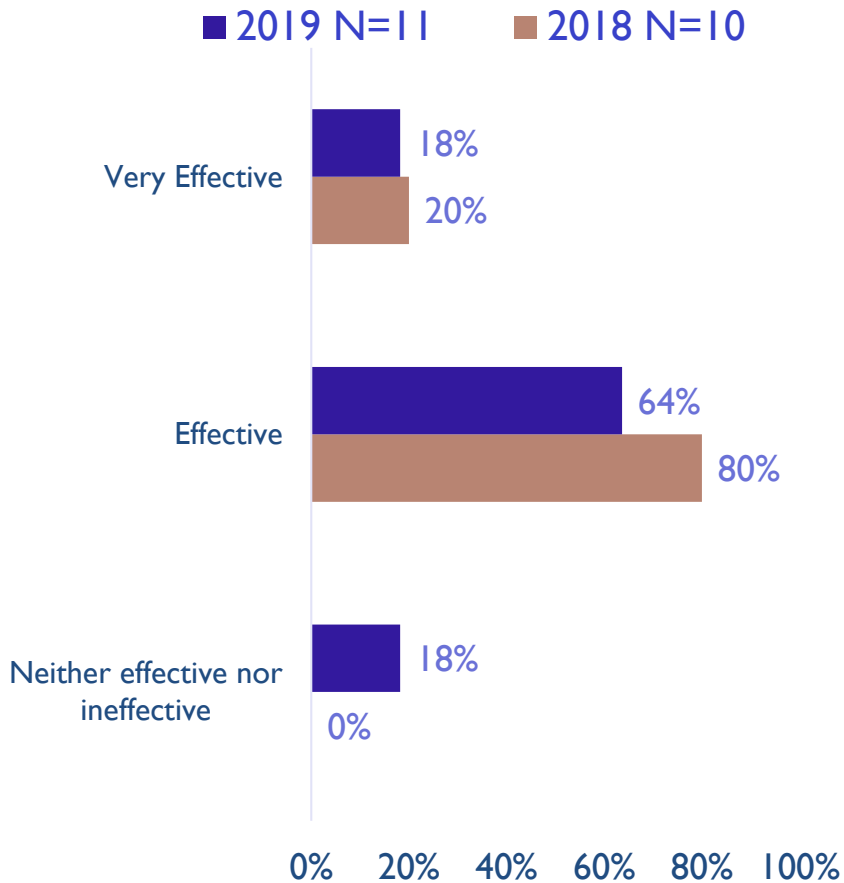


## Standards Development

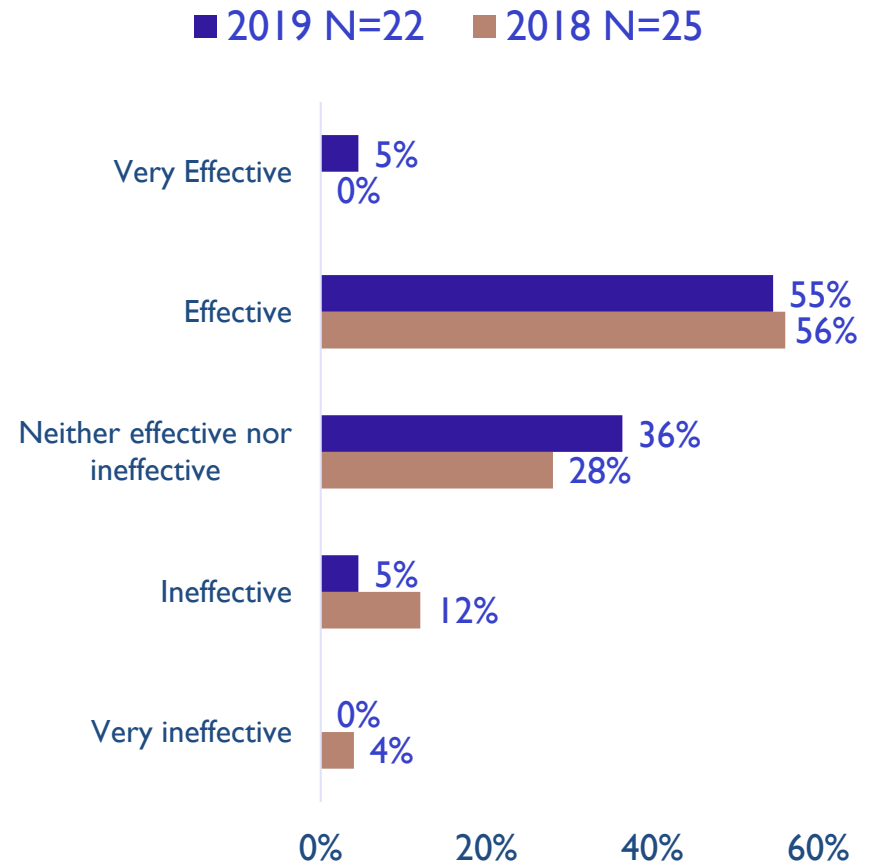


## Efficiency of ERO Enterprise Processes

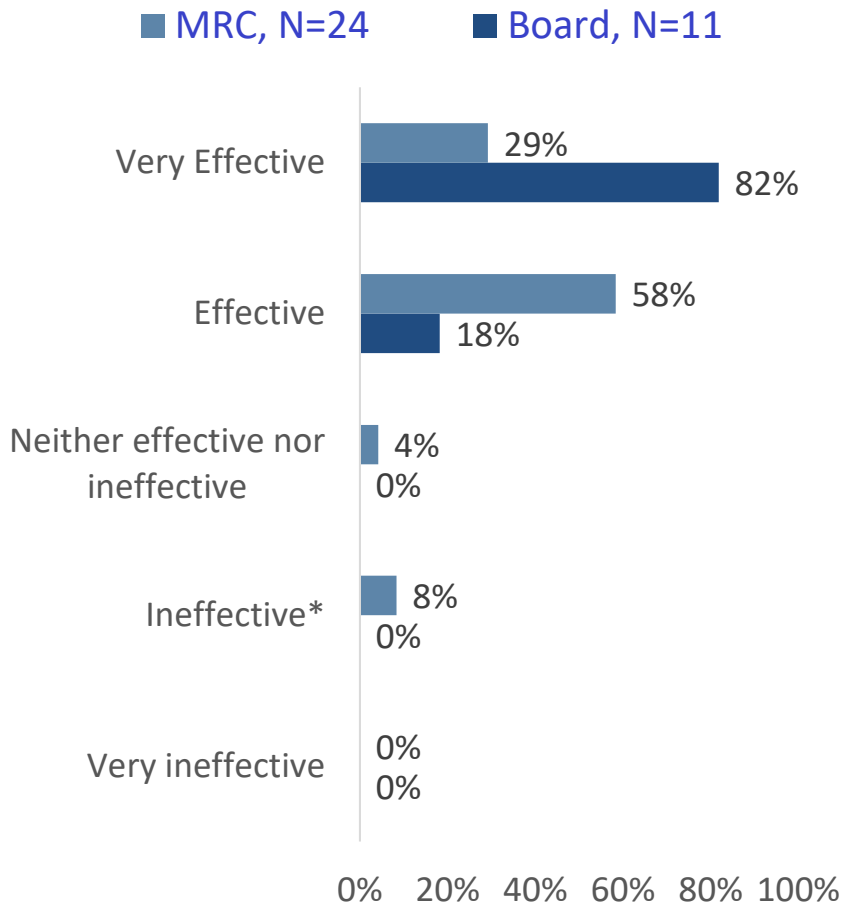
Board – 2019 versus 2018



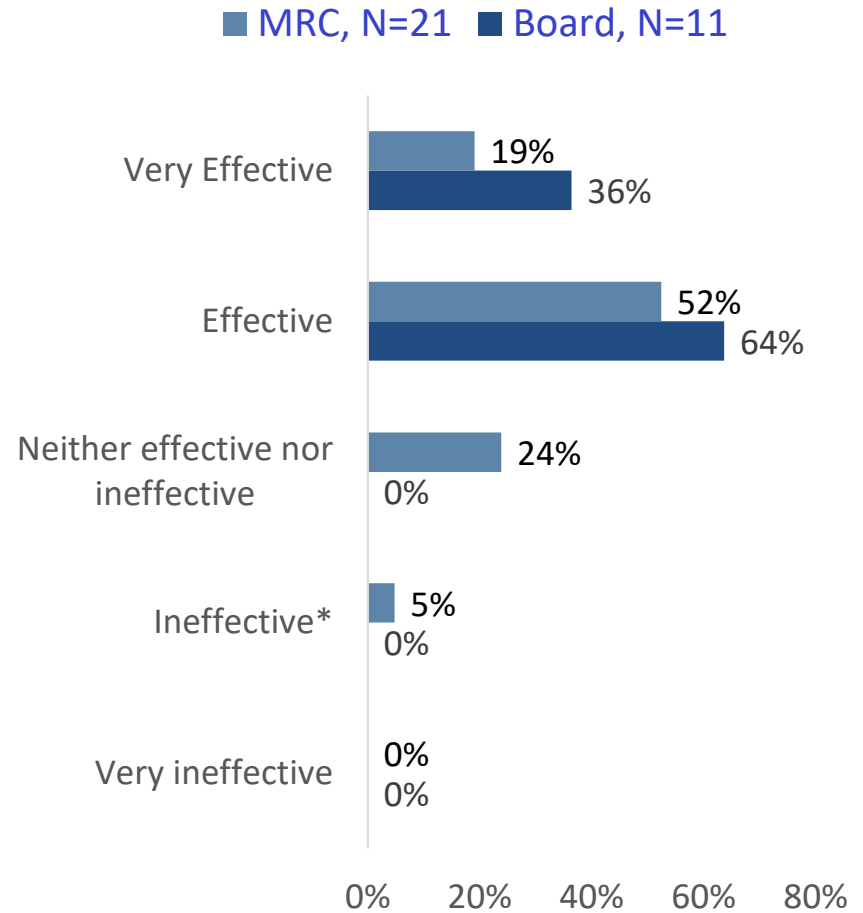
MRC – 2019 versus 2018



## Compliance Monitoring and Enforcement



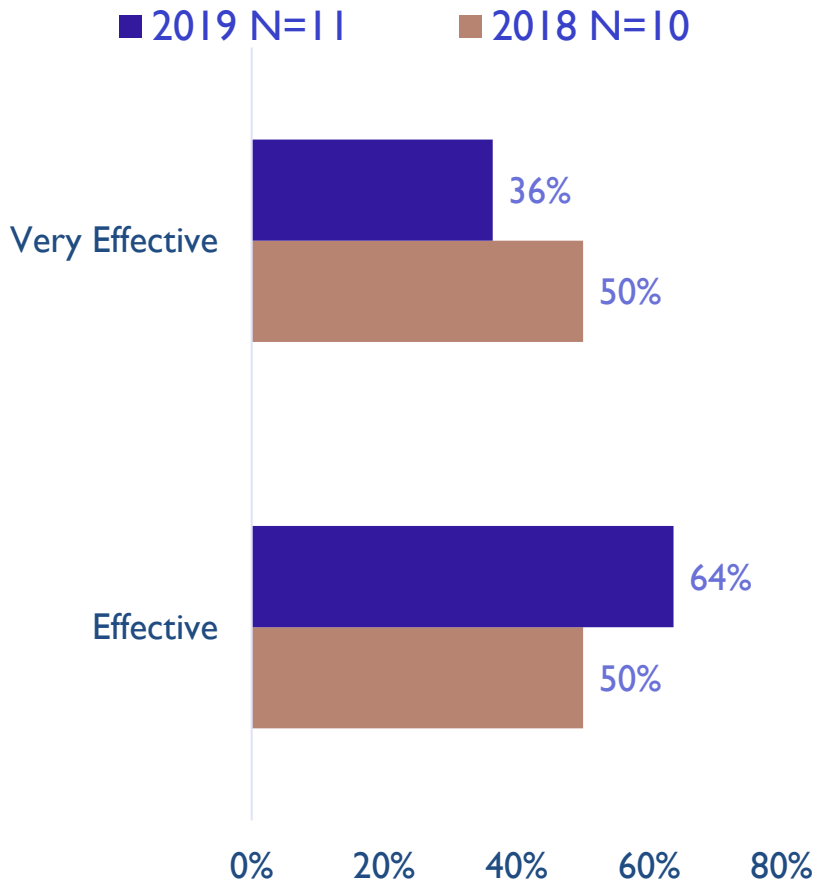
## Reliability Assessments



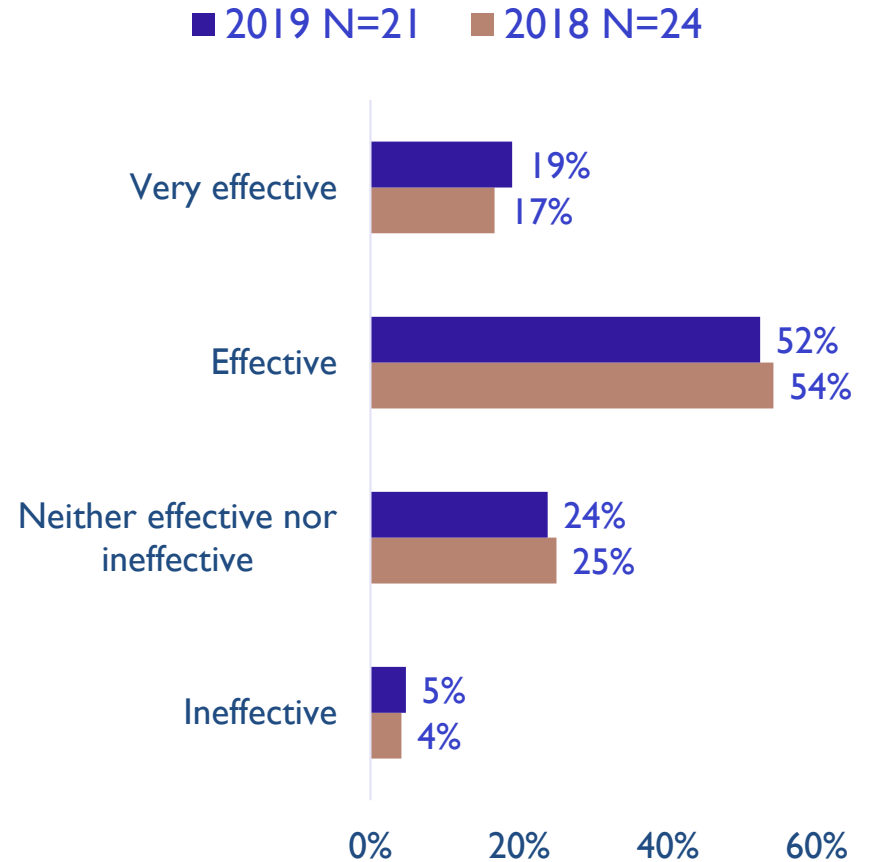


## Reliability Assessments

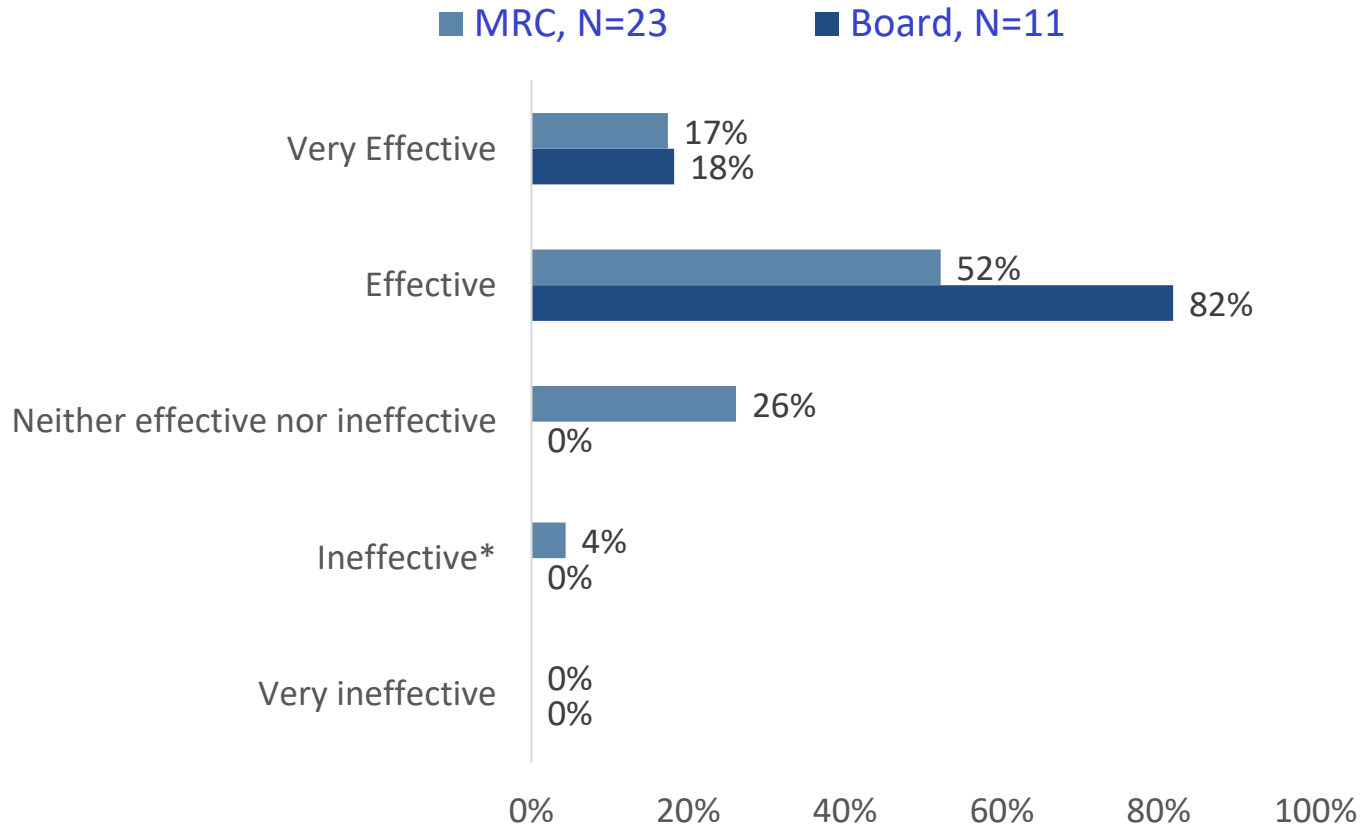
### Board – 2019 versus 2018



### MRC – 2019 versus 2018

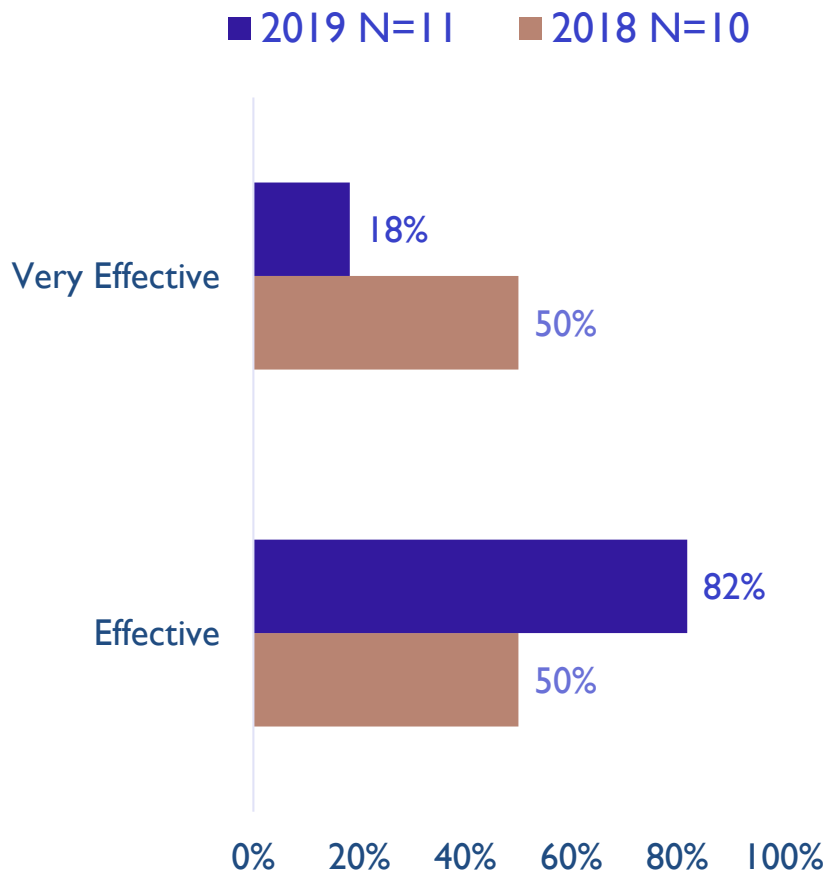


## E-ISAC

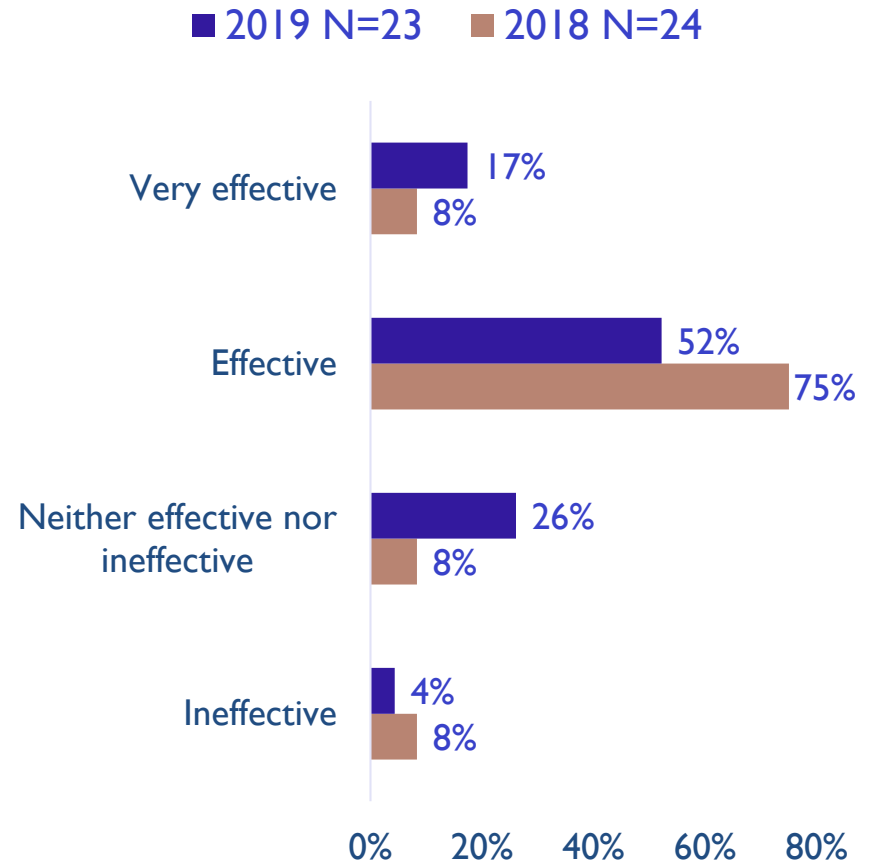


## E-ISAC

Board – 2019 versus 2018



MRC – 2019 versus 2018

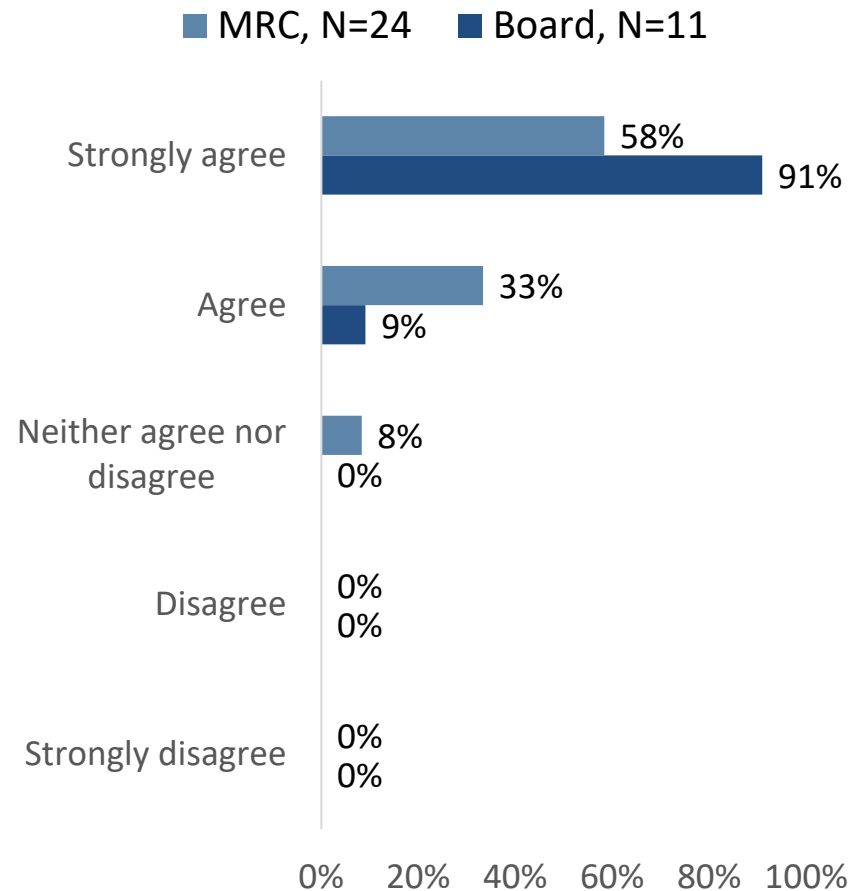
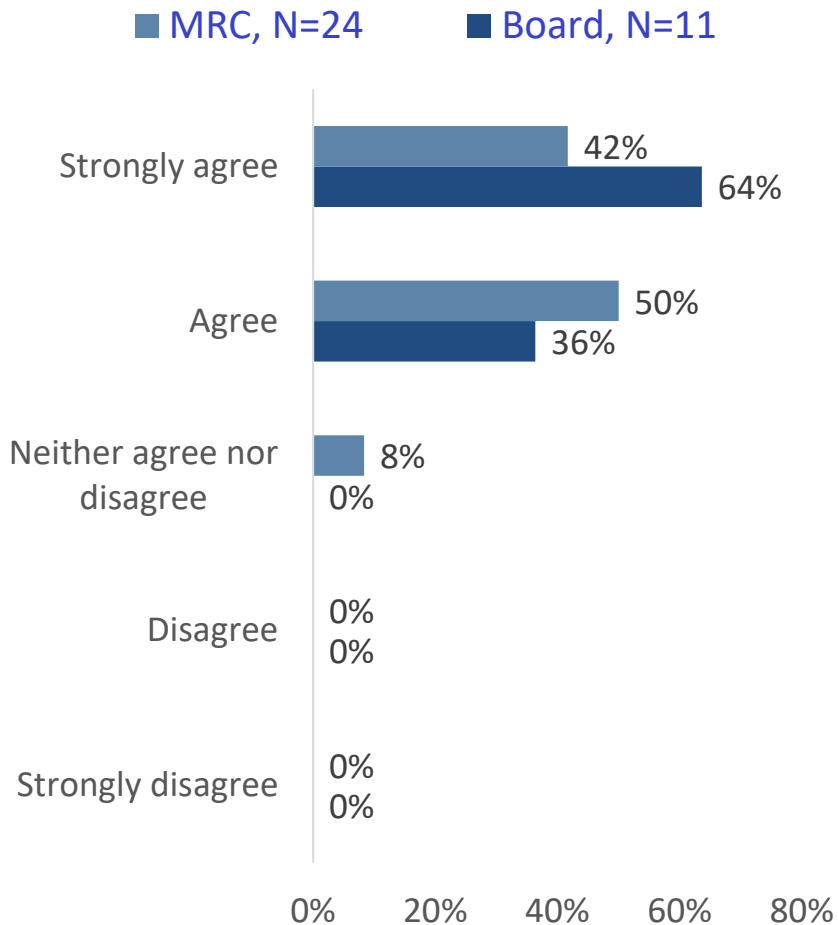




# Stakeholder Relations

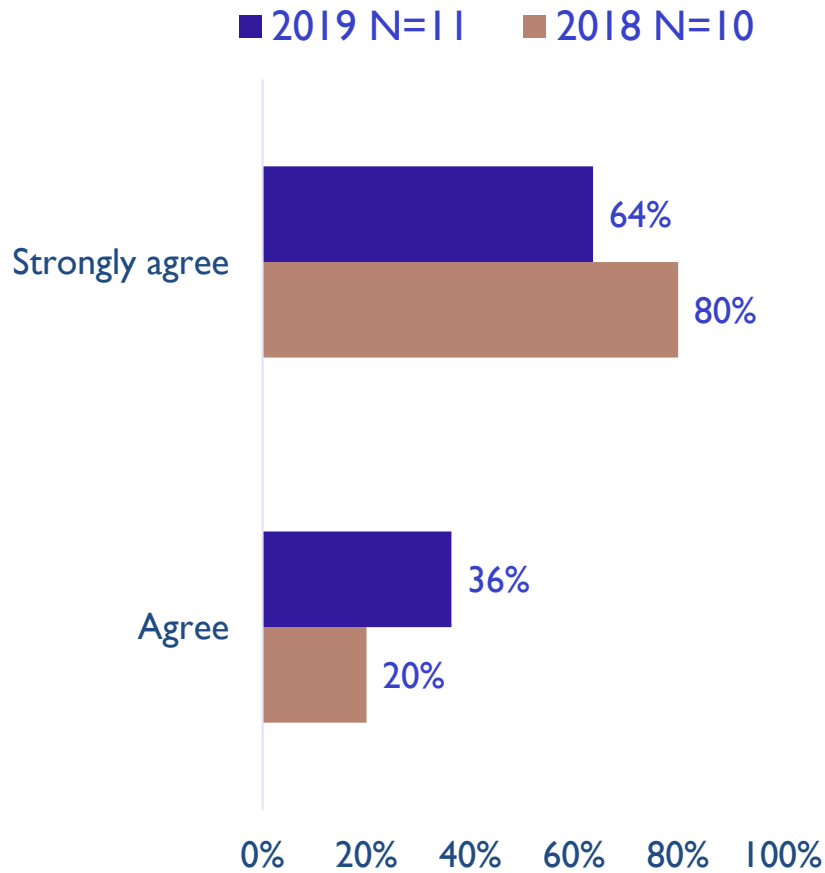
*"The Board listens to input from the MRC"*

*"The Board listens to input from NERC management."*

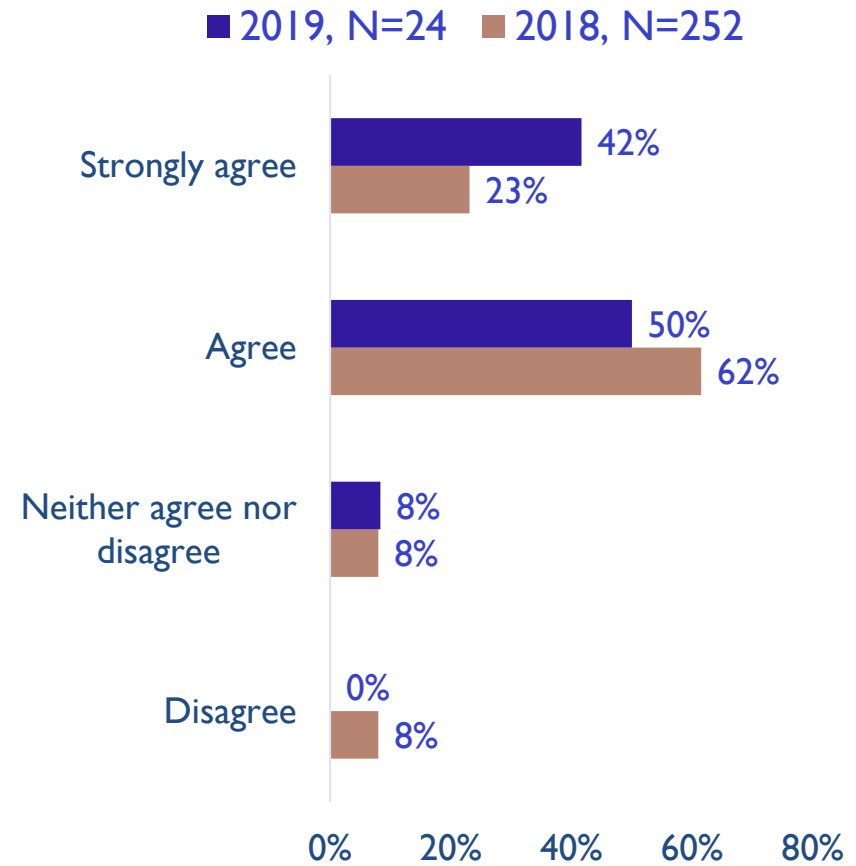


*"The Board listens to input from the MRC"*

*Board – 2019 versus 2018*

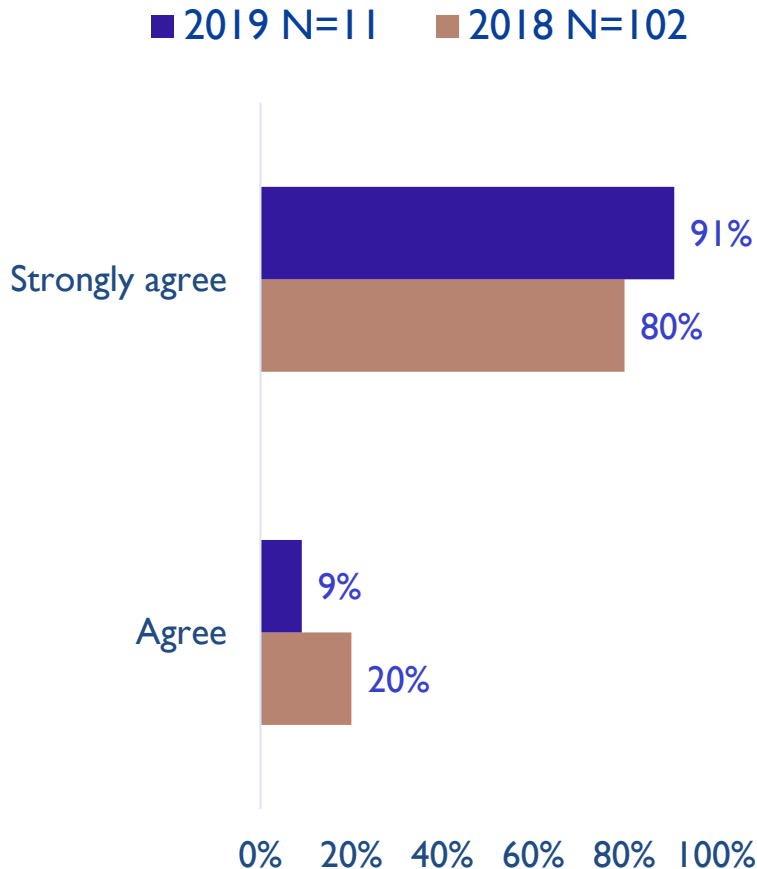


*MRC – 2019 versus 2018*

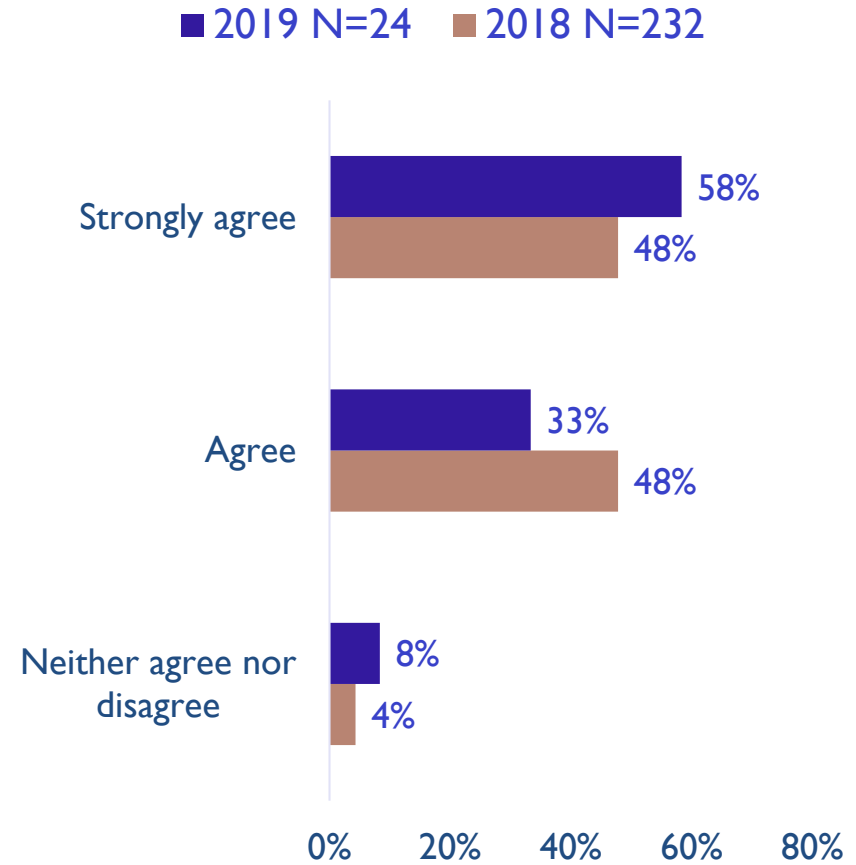


*"The Board listens to input from NERC management."*

*Board – 2019 versus 2018*

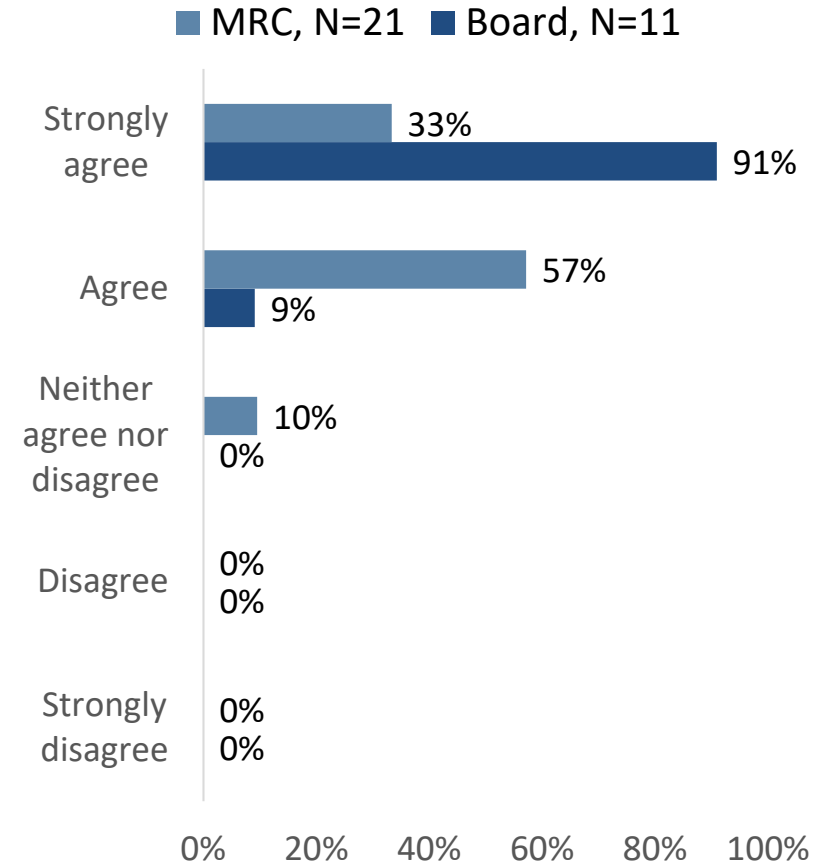
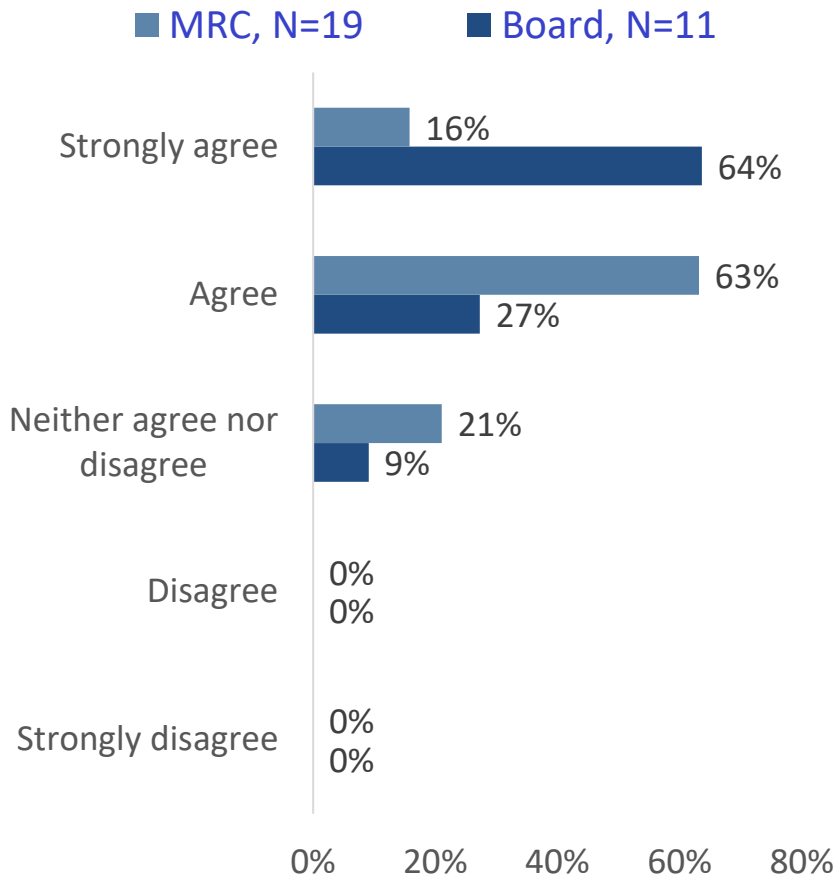


*MRC – 2019 versus 2018*



*“The Board listens to input from Regional Entities.”*

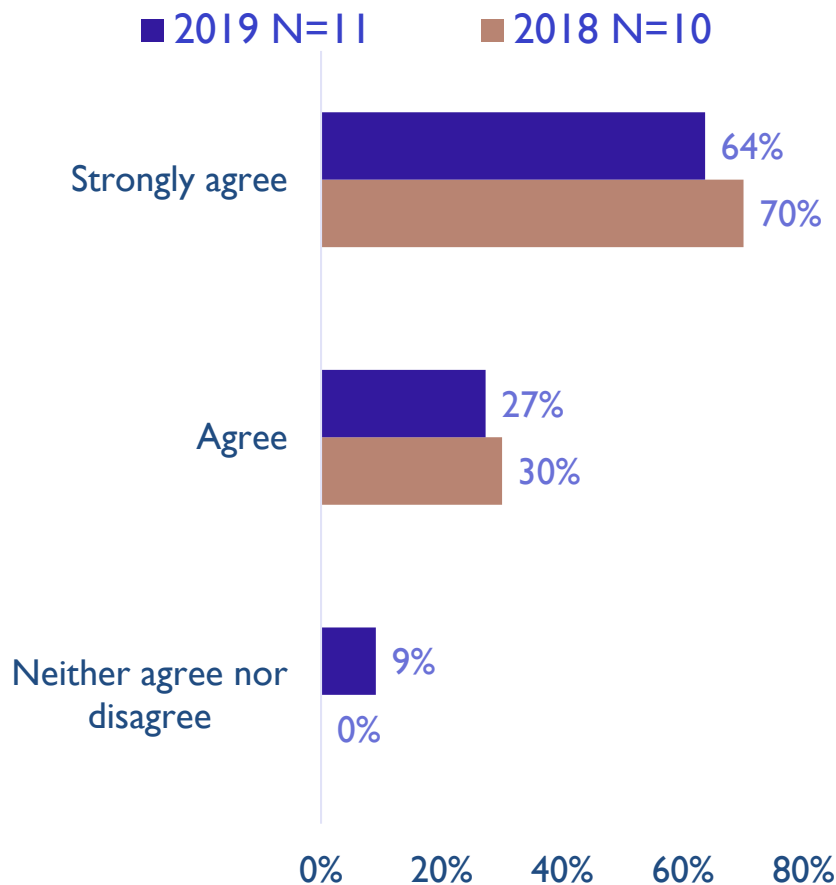
*“The Board works effectively with management..”*



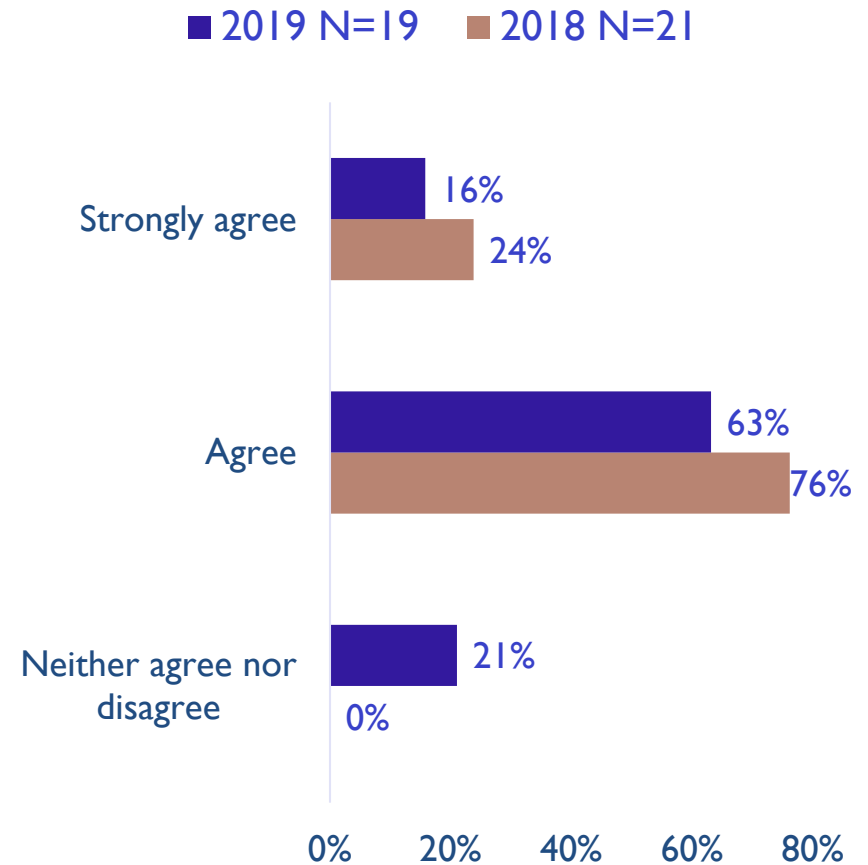


*“The Board listens to input from Regional Entities.”*

*Board – 2019 versus 2018*



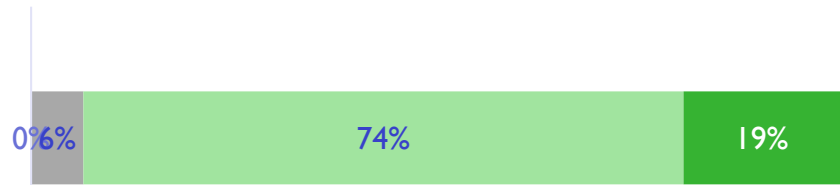
*MRC – 2019 versus 2018*



*Please indicate your agreement or disagreement with each of the following statements about stakeholder relations.:*

Disagree    Neither agree nor disagree    Agree    Strongly agree

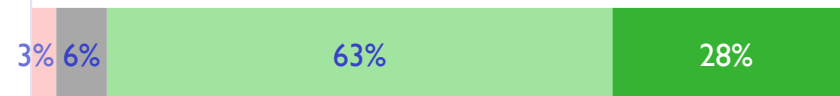
The Board maintains a positive working relationship with Canadian federal and provincial regulators. N=31



The Board maintains a positive working relationship with State regulators. N=28



The Board maintains a positive working relationship with Federal regulators. N=32



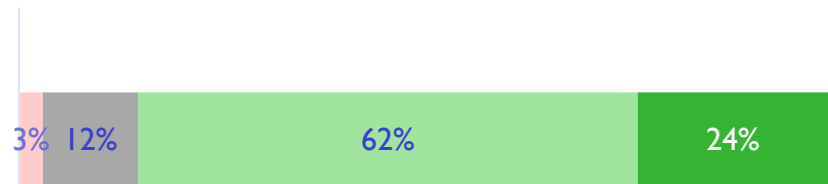
**Board and MRC together.**

0%    20%    40%    60%    80%    100%

*Please indicate your agreement or disagreement with each of the following statements about stakeholder relations.:*

Disagree    Neither agree nor disagree    Agree    Strongly agree

The Board maintains a positive working relationship with Canadian federal and provincial regulators.  
N=34



The Board maintains a positive working relationship with State regulators. N=31



The Board maintains a positive working relationship with Federal regulators. N=33



**Board and MRC together.**

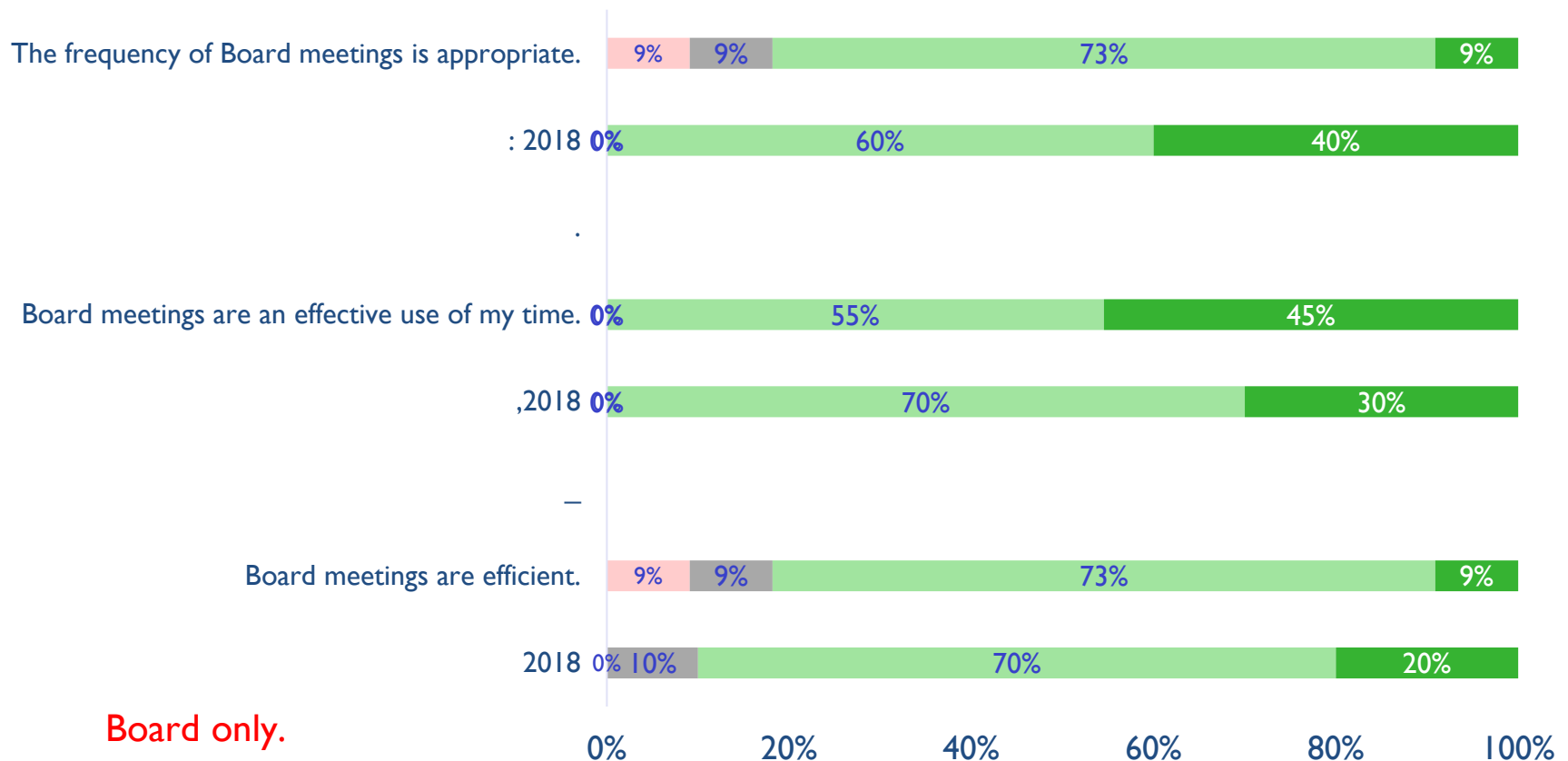
0%    20%    40%    60%    80%    100%



# Board Functioning

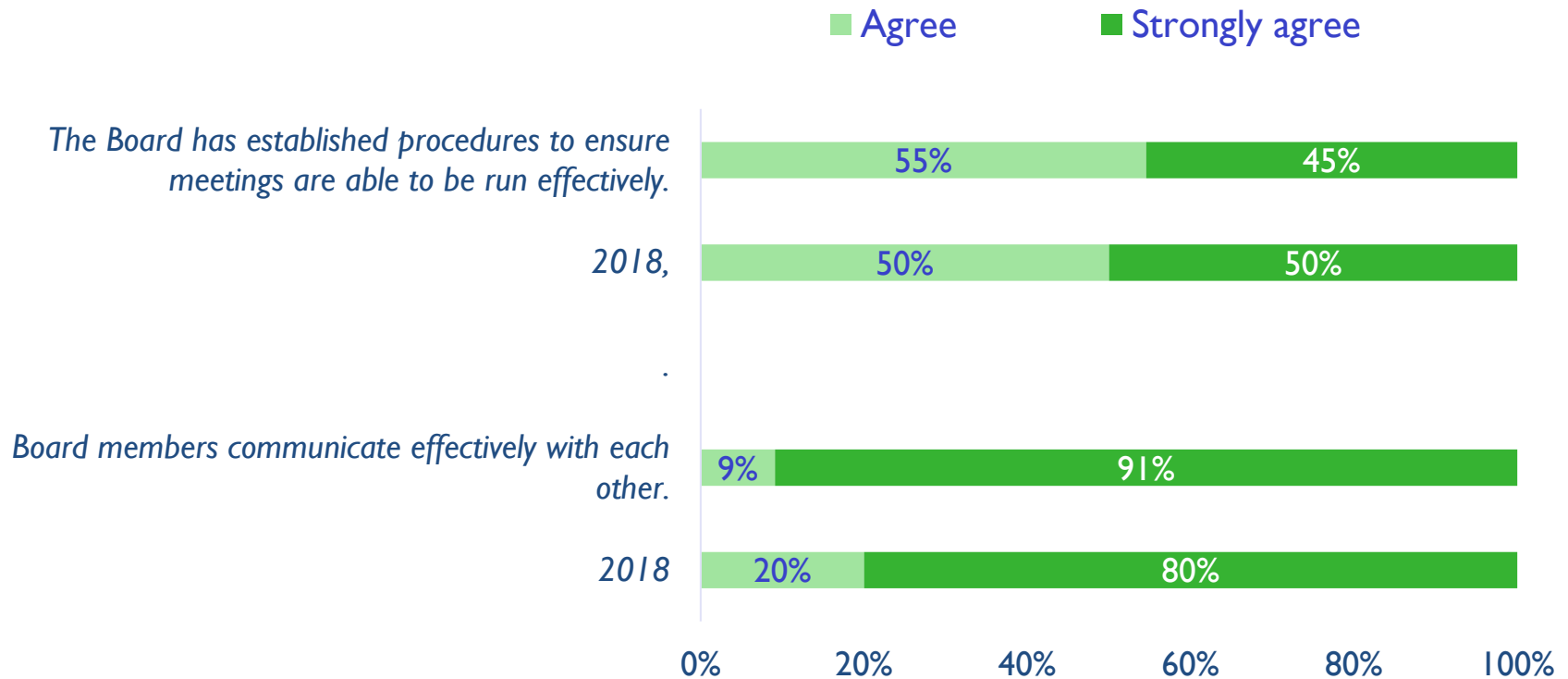
*Please indicate your agreement or disagreement with each of the following statements about Board functioning:*

Disagree    Neither agree nor disagree    Agree    Strongly agree



**Board only.**

*Please indicate your agreement or disagreement with each of the following statements about Board functioning:*

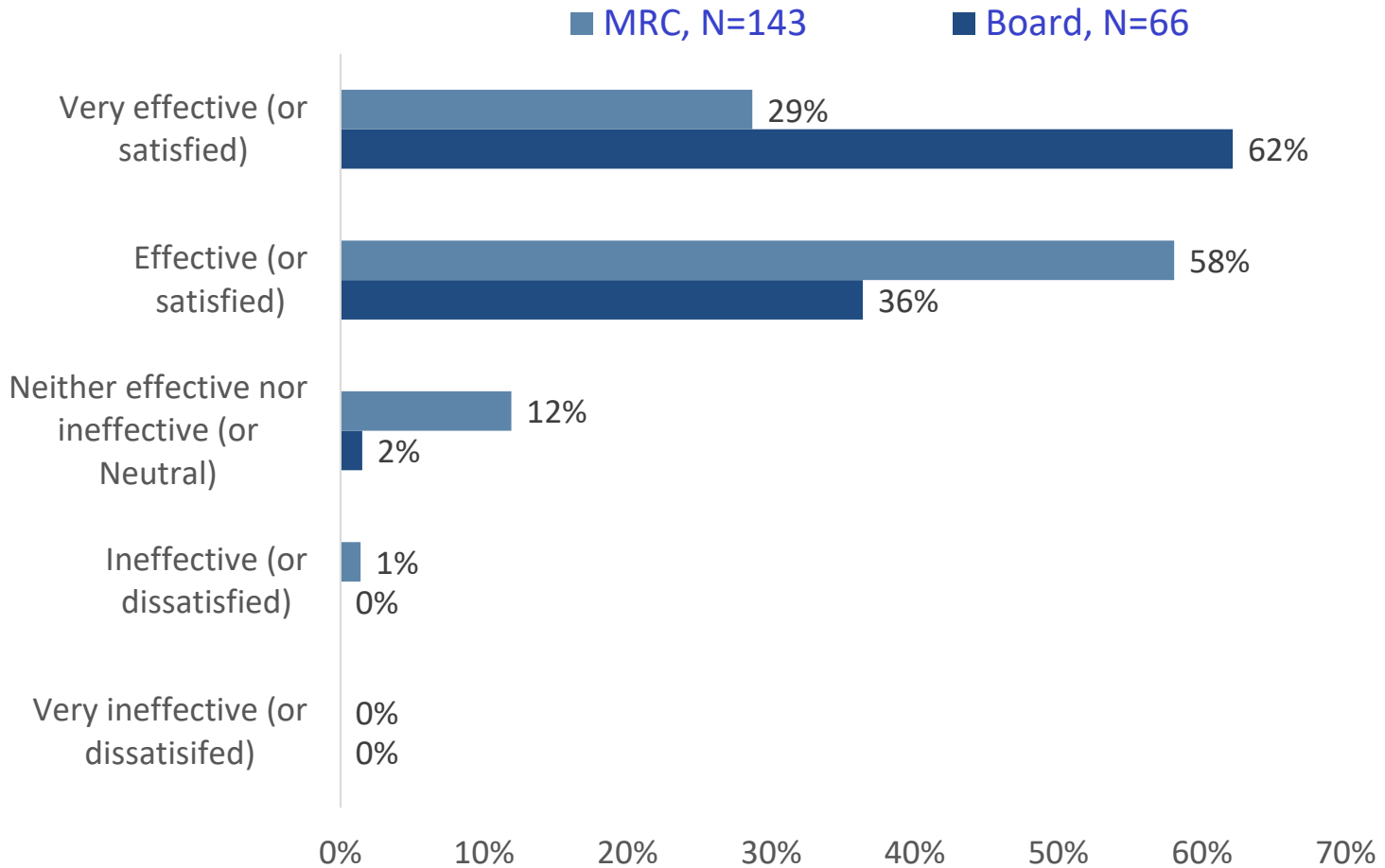


**Board only.**



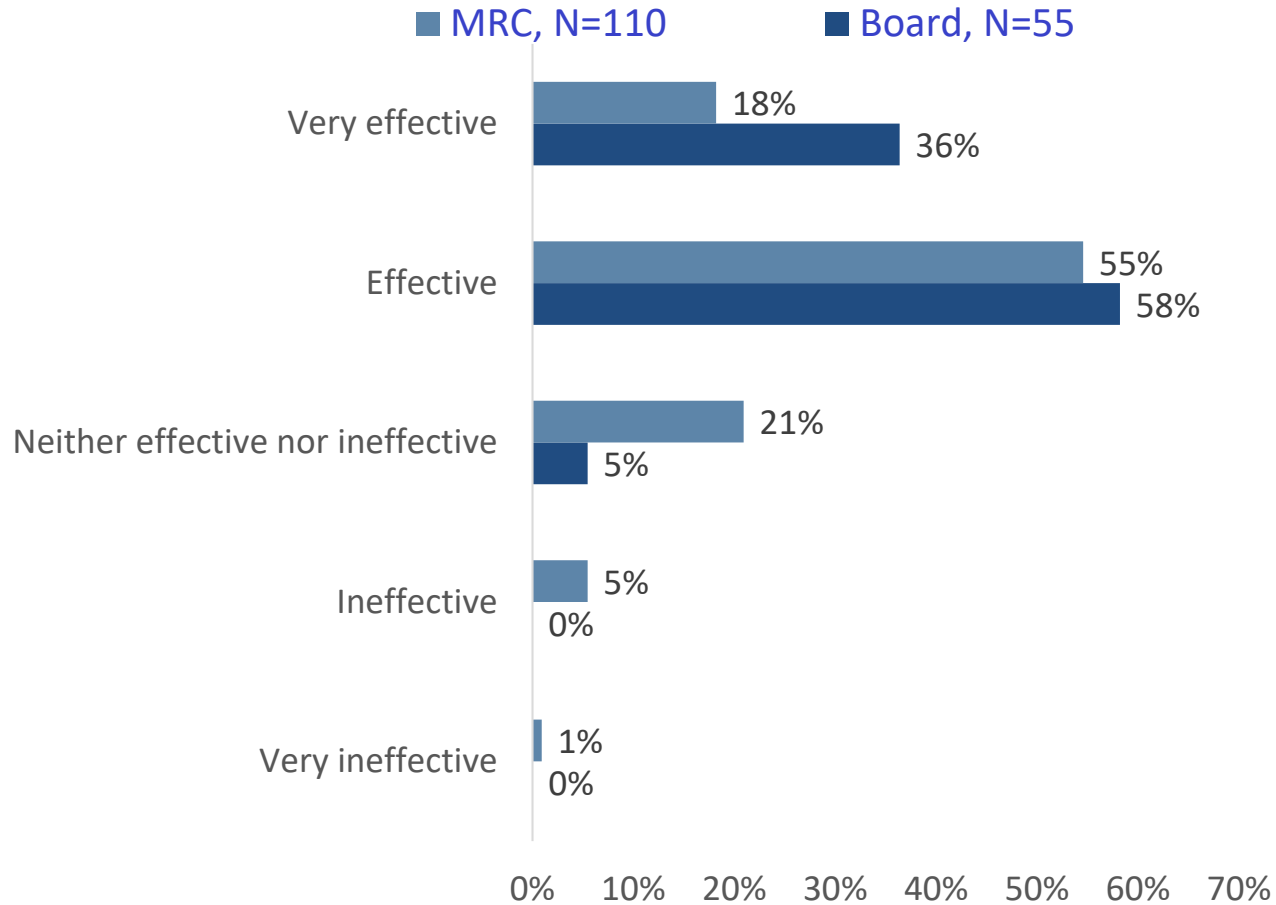
# Area Overall Summaries

*Strategy – Six Questions, five Effectiveness, one Satisfaction*



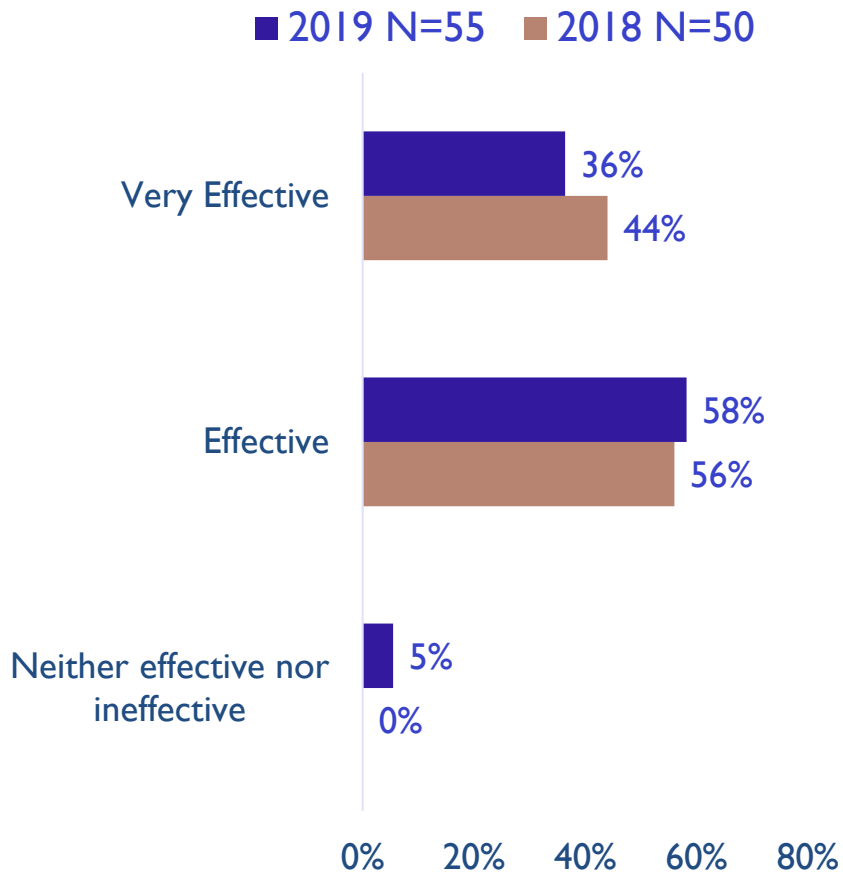


## Oversight – Five Questions

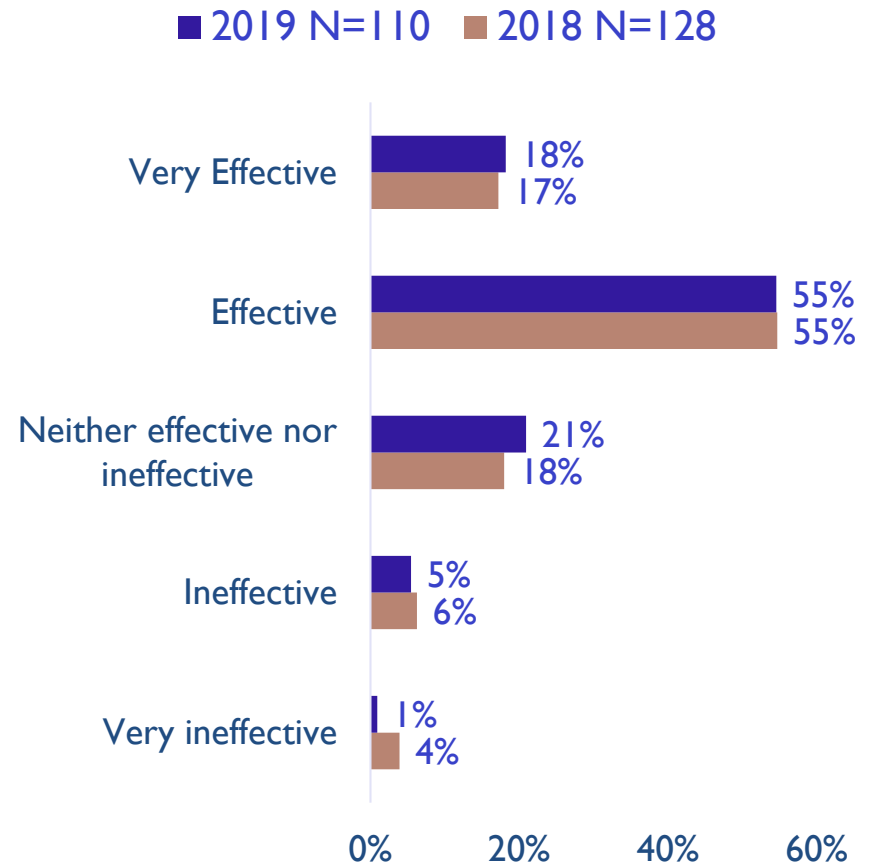


## All Five Oversight Questions Combined

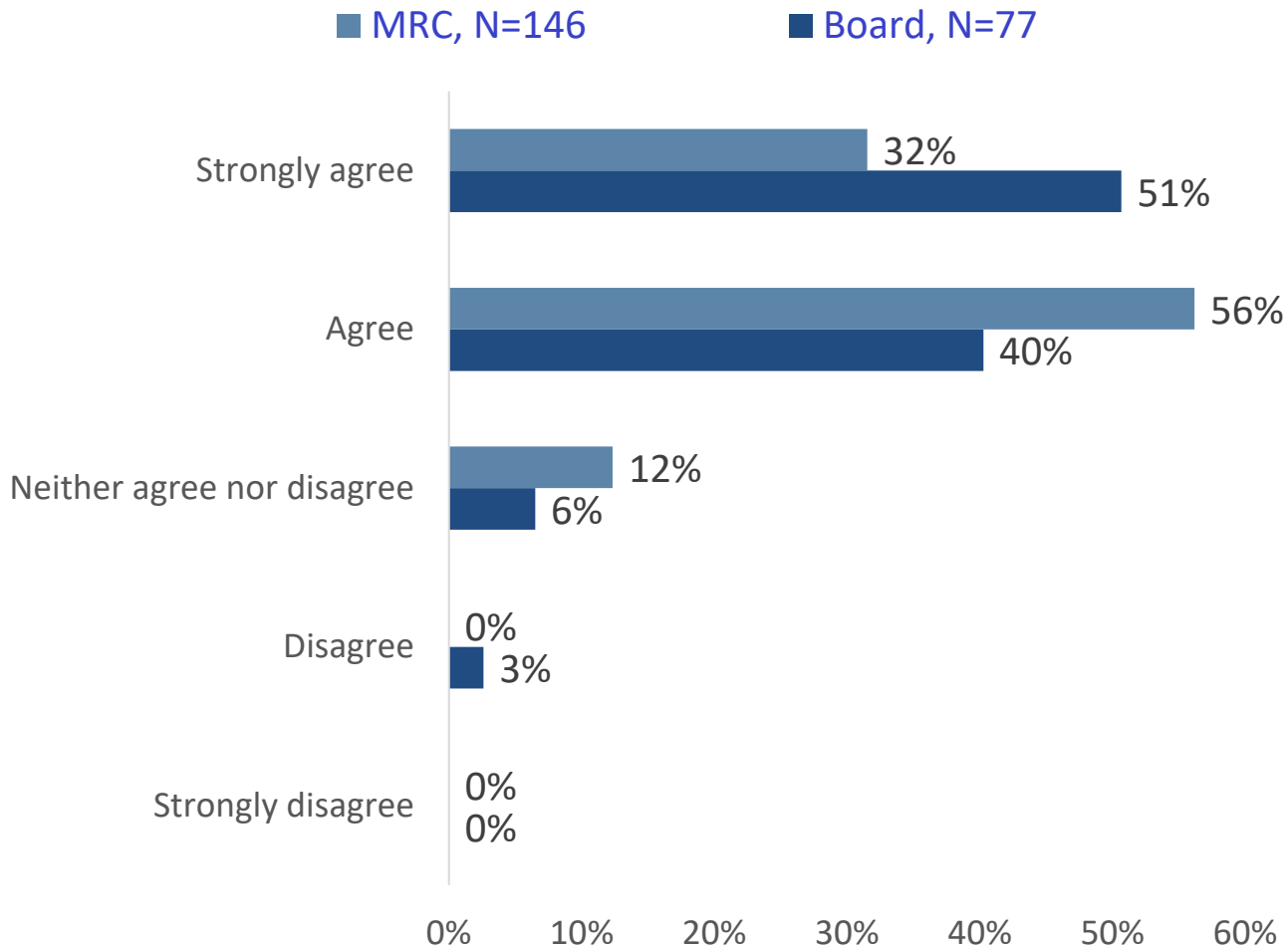
### Board – 2019 versus 2018



### MRC – 2019 versus 2018

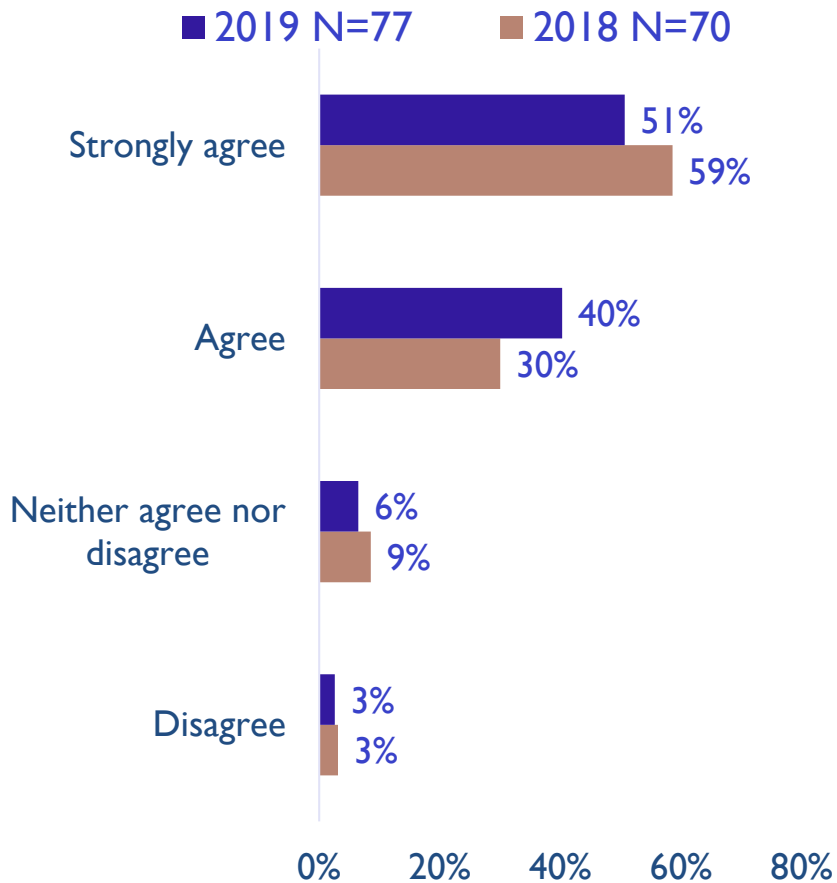


*Stakeholder Relations – Seven Questions*

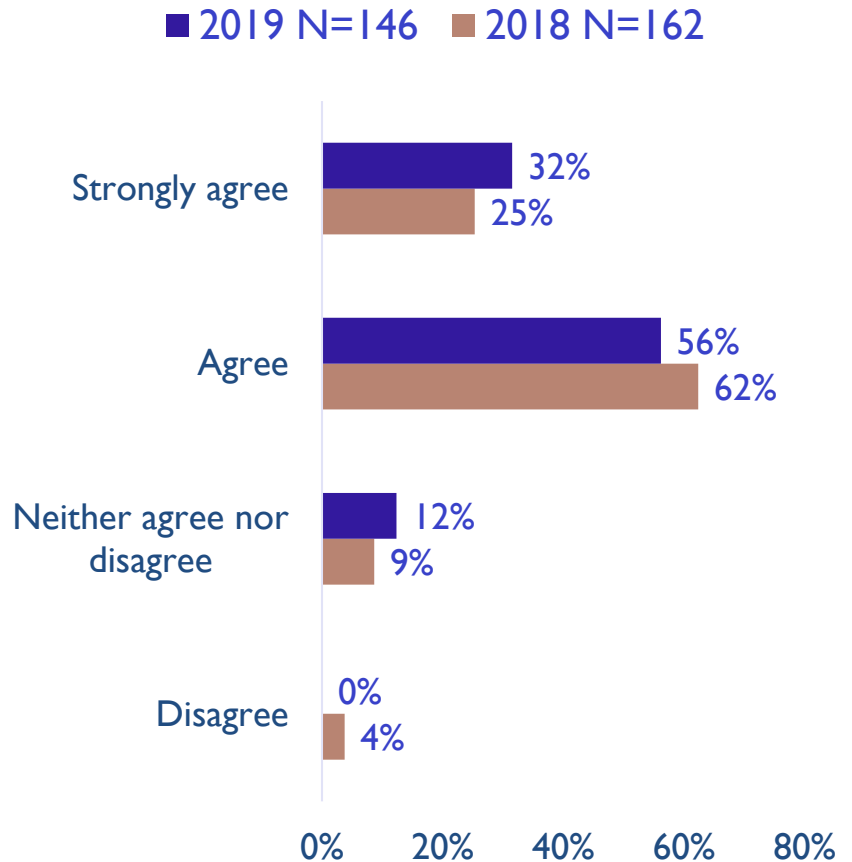


*All Seven Stakeholder Questions Combined*

*Board – 2019 versus 2018*



*MRC – 2019 versus 2018*





# Appendix

- Board of Trustees/Member Representatives Committee Proposed 2018 Survey Questions
- **Levels of Effectiveness (Rating Scale)**
  - 5 = Very effective, 4 = Effective, 3 = Neither Effective nor ineffective. 2 = Ineffective ,1 = Very ineffective
- **Levels of Satisfaction (Rating Scale)**
  - 5 = Very satisfied, 4 = Satisfied, 3 = Neutral, 2 = Dissatisfied, 1 = Very dissatisfied
- **Levels of Agreement (Rating Scale)**
  - 5 = Strongly agree, 4 = Agree, 3 = Neither agree nor disagree, 2 = Disagree, 1 = Strongly disagree

**The survey included a prompt requiring comment for any item rated a “1” or a “2”.**

## Overall Effectiveness

- Overall, how effective is the Board of Trustees at performing their responsibilities?
- Overall how satisfied are you personally with the job you do working on the Board of Trustees?\*
- What are the Board of Trustees' MOST important functions at NERC? [Select No More Than 3]

\*Board Only Questions

## Strategy

- Please rate the Board's effectiveness in overseeing NERC Management or staff to produce a final annual business plan and budget.
- Please rate how effective the Board of Trustees is at each of their following functions.
  - Staying in tune with issues and trends affecting NERC and the industry
  - Setting company priorities
  - Providing leadership
  - Incorporating the international charter of the North American bulk power system
- How satisfied are you with how the Board incorporates advice and/or recommendations from the MRC?

## Oversight

- Please rate the amount of involvement the Board has in each of the following:
  - ERO Enterprise's (NERC and the Regional Entities) annual business planning and budgeting process
  - Day-to-day management by NERC's CEO
- Please rate the Board's effectiveness at monitoring each of the following:
  - Efficiency (cost effectiveness) of ERO Enterprise processes
  - Standards Development
  - Compliance Monitoring and Enforcement
  - Assessments
  - E-ISAC

## Stakeholder Relations

- Please indicate your agreement or disagreement with each of the following statements about stakeholder relations.

The Board listens to input from the MRC.

The Board listens to input from NERC management.

The Board listens to input from Regional Entities

The Board works effectively with management.

The Board maintains a positive working relationship with Federal regulators.

The Board maintains a positive working relationship with State regulators.

The Board maintains a positive working relationship with Canadian federal and provincial regulators.

## Board Functioning\*

- Please indicate your agreement or disagreement with each of the following statements about Board functioning.

Board meetings are efficient.

Board meetings are an effective use of my time.

The frequency of Board meetings is appropriate.

Board members communicate effectively with each other.

The Board has established procedures to ensure meetings are able to be run effectively, including delivery of agendas and appropriate background material in time to prepare in advance of meetings





# Questions and Answers