



Memorandum

To: ISO Board of Governors and Western EIM Governing Body
From: Elliot Mainzer President and Chief Executive Officer
Date: March 9, 2022
Re: CEO report

This memorandum does not require Board of Governors or Western EIM Governing Body action.

INTRODUCTION

For my March CEO Report, I will touch on the release of our first 20-Year Transmission Outlook, progress on EDAM and the WEIM Governance Review Committee, the latest information regarding Summer Readiness, our newest members of the WEIM, the successful launch of the ISO's video on battery storage and the release of our revised straw proposal for energy storage enhancements, management of cyber security threats amidst the invasion of Ukraine, the latest on our COVID response, and my recommendation that Dr. Benjamin Hobbs be reappointed to the Market Surveillance Committee.

20-YEAR TRANSMISSION OUTLOOK

Last month, the ISO released its first-ever 20-Year Transmission Outlook, providing a long-term conceptual plan for the transmission grid in 20 years, as we work to better align resource and electric load needs with state agency input on load forecasting and power resource planning. The Outlook generated considerable news coverage, which was largely positive, as has been the reaction from our state colleagues and a variety of stakeholders appreciative of the longer planning horizon.

The Outlook is designed to start the process of delineating the long-term architecture of the California grid as we continue to add significant amounts of clean-energy projects to the system. As you know, it does not require action by the Board because it does not develop recommendations for specific project approvals like the customary 10-Year Transmission planning process.

The fundamental goal of the 20-Year Outlook, which was drafted in close collaboration with the CPUC and the CEC, is to help us all think and strategize on a longer-term planning horizon about the electric system's infrastructure needs. There is a real need to encourage better coordination between power and transmission planning, resource procurement and interconnection queuing. This type of far-sighted planning and coordination are essential to meet the state's energy policy objectives in a reliable, cost-effective, environmentally sustainable and equitable fashion.

In messaging about the 20-Year Outlook, which is based on the state's planning assumption that nearly 120 gigawatts of clean power will need to be added to the grid by 2040, we have stressed the importance of looking at this as a crucial investment that would enable an enormous amount of new generating capacity. The investment will be staged over 20 years, will be amortized over long-lived assets, and is essential to the continued health of California's \$3 trillion-a-year economy. We also emphasized that the blueprint will be refined over time and that the ISO is committed to continue working with state agencies, the utilities and other stakeholders in finding the most cost-effective solutions possible.

After taking stakeholder comments into account and finalizing the Outlook this month, our plan is to promote discussion of the findings in ongoing SB 100 processes and perhaps additional stakeholder sessions, to collect input on issues and parameters that could be considered and refined in a future Outlook development cycle that begins perhaps as early as 2023 and to provide industry an update on the 20-Year Outlook activities and communicate our intentions going forward by the end of this year.

10-YEAR TRANSMISSION PLAN

The updated 10-Year Transmission planning process, which was worked on at the same time as the 20-Year Outlook, goes to the Board of Governors for consideration this month. The 10-year plan calls for \$2.9 billion for 24 projects for system expansions, upgrades and reinforcements needed over the next decade. This year's annual update of the 10-year planning process was based on the premise that 2,700 MW of new resources will be added each year over the next 10 years and reflects the accelerated pace of clean resource development that is needed to help the state meet its clean-energy objectives. The plan acknowledges that greater volumes of solar and battery storage are needed – as well as additional greater resource diversity beyond those two resources – and that the transmission system will also need to be expanded, upgraded and reinforced to access and integrate these additional clean resources.

EXTENDED DAY-AHEAD MARKET (EDAM)

EDAM stakeholder working groups focusing on key aspects of the design framework are on track to reach their conclusion as we move forward toward publishing a comprehensive straw proposal in late-April. The groups have made good progress, discussing a number of key and challenging topics over the last several weeks. These working groups have consistently had more than 100 participants, with stakeholders presenting ideas and framework proposals for consideration and discussion. Once the working groups have concluded, the ISO will publish a summary report for each one capturing the topics discussed, consensus on any design elements or key options put forward, and summarizing general perspectives of the different groups. The working group discussions and the summary reports will be essential inputs in the development of the comprehensive straw proposal.

In response to stakeholder comments and requests, we have instituted monthly EDAM working group stakeholder briefings to take stock of the working group discussions, discuss interdependencies, and allow an opportunity for stakeholders to get up to speed on discussions across all three working groups. The first briefing was held Feb. 16, and the next one will be March 18. The team will take stock of the concluded working group discussion

and the associated process, and discuss next steps. As the stakeholder process moves forward, the ISO is open to further leveraging the working group concept on discrete, narrower, topics and help with additional work on challenging elements of the design.

We are on track for publication of the comprehensive straw proposal late next month, providing opportunity for more formal written feedback considering how the EDAM design fits together holistically. Design of an EDAM framework is a challenging but important effort as it looks to bring together concepts of the bi-lateral world with the organized market world. This provides an opportunity to work collaboratively toward achieving benefits for California and the West. We appreciate the time and effort of our stakeholder community to engage with us, to bring forward ideas and perspectives and we look forward to continuing to work together to evolve the market design through an open and collaborative process.

WEIM GOVERNANCE REVIEW COMMITTEE

With the WEIM Governance Review Committee (GRC) now having a full complement of 14 members, the Committee held a public session on February 17 to brief stakeholders on its previous efforts, provide an overview of its proposed process, and request stakeholder comments on what governance elements are affected by EDAM market-design issues. Stakeholder comments on these questions were due March 9. The GRC also held an executive session meeting on February 18 and plans to have its next executive session meeting on March 18. The committee is looking to schedule public meetings in March and April, and will lay out its next steps as soon as they are developed.

SUMMER READINESS, THE SUMMER ASSESSMENT AND THE SUMMER READINESS LEADERSHIP ROUNDTABLE

As we prepare for this summer, the normal preparation activities are well underway to ensure established communication and operations protocols are refreshed between the ISO and its partners. I am also excited to be collaborating with my colleagues across the West as we did last year with a Summer Readiness Leadership Roundtable, which is scheduled for April 27. With the addition of new WEIM entities that have joined our market, the roundtable has grown to approximately 27 invited entities throughout California and the West who share in the responsibility of grid reliability within or adjacent to the ISO's footprint. Given the interdependencies of our grid, we found that the advanced planning, coordinated actions and effective communications made a significant difference last year and are therefore critical again this year in ensuring that our infrastructure and interconnected operations are as tight as possible and that we share our outlook for the summer.

As I mentioned in last month's board memo, the transition from the ISO's emergency declaration levels of "Alerts, Warning and Emergency" (AWE) to the NERC standard emergency alert levels of the "Energy Emergency Alert" (EEA) is well underway. We are working to ensure that our internal processes and systems are updated and that our customers and stakeholders are well prepared for this change. This will provide more consistency and clarity in communicating alert levels.

Other summer readiness activities that are taking place internally include practicing our incident command response in relation to grid emergencies to ensure coordinated communications between our operations staff and external entities through tabletop exercises that will take place in early May. Also, as we do every year, our operations teams are preparing for summer outlook meetings that will also occur in May. Emergency processes and procedures will be reviewed and tested under a peak load scenario and the ISO's summer outlook, load and weather forecasts, and Cal Fire forecasts get evaluated for any potential operational planning concerns and activities.

We also have several other summer preparedness activities underway with customers and stakeholders, including regular meetings focused on the Emergency Load Reduction Program (ELRP) where the Resource Adequacy outlook and Demand Response programs are reviewed. Regular coordination meetings with senior level officials at the Investor Owned Utilities that were initiated last year have also commenced for Summer 2022 planning.

At the same time, work on our annual Summer Assessment is underway. We are on track to have that posted with Board materials for the May Board meeting. Overall, the Assessment will show we are heading into this summer with considerably more capacity on the system and there is no question we are in better shape this year than last, but not without concerns.

In 2021, we added 5,426 MW of new capacity, including 2,419 MW of storage, the vast majority of which was lithium-ion utility scale battery installations. That extra capacity and our enhanced communications and coordination allowed us to keep the system balanced and the lights on during some challenging days last summer.

By June 1 of this year, we anticipate adding another 3,999 MW of new resources, including 2,036 MW of storage. We have seen some delays in getting new projects completed due to COVID-19 and the kinds of supply chain disruptions we are all aware of, and we are watching those closely. Our grid operators are going into this summer with more confidence relative to reliability.

Unfortunately, unless we get some significant precipitation in March, our 2022 numbers in the upcoming Summer Assessment for hydro will be based on the 2015 hydro year, which was the lowest in recent history. This is an obvious concern that we will watch very closely. We all breathed a sigh of relief with a strong precipitation month in December. At that time, the California Department of Water Resources reported the statewide snowpack at 160 percent of average. Reservoirs were getting filled, there was plenty of moisture and hydro resources were improving. Then we had the far more sobering report from DWR on March 1, following the driest January and February in state history. The statewide snowpack was 63 percent of average for that date. The Pacific Northwest is still getting snow and rain, so conditions are looking better there, but unless we get a really wet, snowy March we could be looking at hydro resources this summer that are once again limited.

And as you know, even with the new capacity we can draw on this summer, we are still potentially vulnerable to shortages if we have an extended extreme heat wave hitting the Pacific Northwest, the Desert Southwest and Northern and Southern California all at once, as was the case during August and September of 2020.

TWO MORE UTILITIES JOIN THE WESTERN ENERGY IMBALANCE MARKET

On March 2, our Communications and Public Relations team announced that Avista Utilities and Tacoma Power, two utilities with a combined 600,000 customers in the Pacific Northwest, are now active members of the WEIM. They are the first of four utilities joining the real-time energy market in 2022, with the Bonneville Power Administration and Tucson Electric Power joining later in the year. When all four are on board, WEIM will have 19 members serving nearly 77 percent of the demand for electricity in the Western United States.

On a related and very positive note, the cumulative financial benefits for WEIM participants are projected to top \$2 billion during the first quarter of this year. That is a significant milestone for WEIM and another compelling example of the advantages of participating in a regional electricity market as we continue our work on EDAM and extending those financial and other regional market benefits much more broadly.

ISO STORAGE VIDEO LAUNCHED

The ISO video on the opportunities and challenges associated with adding historic amounts of battery storage to the grid is now public and we are getting positive reactions from people who have had a chance to see it. I had an opportunity to officially “premier” a 6-minute version of the video at the recent Market Development Forum held in Berkeley by the California Energy Storage Alliance.

With about 200 industry and policy people in attendance, there seemed to be a genuine appreciation that we took the time to tell this important story with a solid overview of the history and policymakers who helped get us to this point. The full-length 22-minute version of the video was played on a loop in the lobby of the conference center and our Communications and Public Relations team, which produced the video, has been doing targeted and social media outreach to make sure it gets seen and shared far and wide. They have also been working with the individuals and companies who participated in the video to make sure they are talking about it on their social media platforms and with their contacts. We also have plans to reach the international energy audience because I think there is real value in us sharing the story and lessons learned from last summer as well as the prognosis going forward with policymakers, grid operators and industry officials.

STORAGE ENHANCEMENTS

Our energy storage enhancements initiative has been progressing and a revised straw proposal is being published this month. As part of our regular stakeholder process, the ISO will also publish a draft final proposal and a final proposal, both of which will be available for public comment and public discussion. Plans call for the final proposal to be presented for approval to the WEIM Governing Body and the Board of Governors at the August/September meetings prior to filing at FERC.

In short, this proposal anticipates a new model for storage resources and includes several new tools for our operations team to help manage the grid as storage penetration increases. The proposed policy also allows for an alternative treatment of co-located storage, so that

these resources can operate on the ISO grid in accordance with contractual obligations that are already in place.

CYBER SECURITY

The U.S. Cybersecurity and Infrastructure Security Agency and the FBI issued a joint alert on Feb. 26, warning of the risk of Russian cyberattacks against U.S. networks and critical infrastructure. This includes any system that could compromise national public safety, such as electrical systems. Like other system operators around the country, we have been on heightened status for visibility and awareness of possible cyber threats.

As you know, the ISO has an active cyber security monitoring and prevention program in place, and robust physical security features built into our headquarters. Our cyber and physical security teams are also in close contact with federal, state and local authorities. They are briefed on any geopolitical or other emerging issues affecting security of critical infrastructure. We have received no information indicating a specific, credible threat to the grid and we keep our employees informed and alerted to any heightened security concerns, reminding them regularly to be more vigilant and to report any suspicious activity.

RETURN TO BUILDING

A little more than a week after my last CEO report in February, we notified all ISO employees that we were delaying our planned March 14 full return-to-building due to a few different factors. Contributing to that decision were several COVID outbreaks in the building and current regulatory requirements we felt would have made it very difficult to comply with testing and reporting protocols with the full population back on campus as planned for March.

As you know, we also told employees they could return to the office on a voluntary basis, but that our new date for a full return to building was being delayed until April 18. And at that time, employees and contractors could work in the office either fulltime or on a hybrid schedule. We have continued moving forward and progressing on some of the remaining logistics around that timetable, including new workstations and other considerations.

However, as I announced in an all-employee email March 4, the delay allowed me to more closely observe what's happening externally within our industry and within corporate America more broadly. It also provided additional time to hear more of the concerns many of our employees still have about coming back to the office. That process led me to be open to reimagining how flexible we should be regarding where our employees work going forward and how much in-person interaction we have as an organization. I told employees we would follow up with a short survey to hear from them again on this issue and that we would take the survey data into consideration and report back to our staff by the beginning of April. These issues are significant to the ISO in both the short and long-term. They have an impact on our ability to recruit and retain the highly skilled and talented workforce we need. It is important that we make the right decision and this extra time and survey results will help us do that.

MSC APPOINTMENT

Dr. Benjamin Hobbs has served as a member of the ISO Market Surveillance Committee since 2002. His current term expires on March 31, 2022. During his tenure on the MSC, Dr. Hobbs has provided invaluable expertise and advice to the ISO Board of Governors, Western EIM Governing Body, ISO Management and staff on numerous issues relating to the operation of the ISO market.

Under the tariff, and the new joint authority construct, the ISO CEO recommends joint approval by the ISO Board of Governors and WEIM Governing Body for MSC appointments. Therefore, as outlined in the joint ISO Board of Governors and WEIM Governing Body memo, I request that the ISO Board of Governors and WEIM Governing Body approves the re-appointment of Dr. Hobbs as a member of the MSC and authorize execution of a contract for a three-year term.