

Nomination for Transmission & Distribution

ZERO DOWN TIME (ZDT) SYSTEM FOR SUPER PREMIUM TOURISM DESTINATION OF LABUAN BAJO:

***“Realizing No Outage & No Dip Interruption
Utilizing Advance Automation Technology”***

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Zero Down Time (ZDT) System For Super Premium Tourism Destination Of Labuan Bajo-Indonesia: Realizing No Outage & No Dip Interruption Utilizing Advance Automation Technology

Executive Summary

On 8 April 2018 Labuan Bajo, East Nusa Tenggara was decided by the president of Indonesia as a super-premium tourism destination area. The establishment of Labuan Bajo as a super-premium tourism destination requires PLN to provide the highest quality electricity services. With this momentum to answer of challenges PLN implemented a Zero Down Time (ZDT) system to elevate the electricity services with no outage and no dip. During 2021- 2023, 17 international events were successfully carried out safely and reliably. From the Labuan Bajo customer satisfaction survey on electricity services in 2022, the customer satisfaction index increased from 93% to 100%. Labuan Bajo is currently the new epicenter of growth in Indonesia with an economic increased growth from 1.29% in 2021 to 4.12% in 2022 with 195.000 tourists annual and tourism sector investment increased by 24.7% in 2022.

Introduction

With its extraordinary natural landscapes, Labuan Bajo East Nusa Tenggara was designated as a Super priority tourism destination by the Indonesian President in 2018, makes PLN have to elevate the high quality power supply. At the time, Labuan Bajo distribution network was a radial type with air conductors, without qualified backup system. PLN seeks to implement Zero Downtime (ZDT) services as a breakthrough to provide reliable and flicker-free electricity services. The project began in September 2021 by strengthening the power plant supply system, revitalizing the distribution network configuration, protection system, and contingency system using Uninterruptible Power Supply(UPS). The project was carried out within 6 months (Sept 2021-Feb 2022) and there have been 12 ZDT labuan bajo customers. With the success of the Labuan bajo ZDT system, 17 major international events have been successfully held including the ETWG G20, Asean Summit, AMMTC, AARC, etc. PLN is increasingly confident that the Labuan Bajo ZDT system service will have a very significant impact on economic growth as the new epicenter of growth of East Nusa Tenggara Indonesia.

Solution Design (Implementation Of Zero Down Time System)

Generally, Zero Down Time (ZDT) system show at Figure 1.

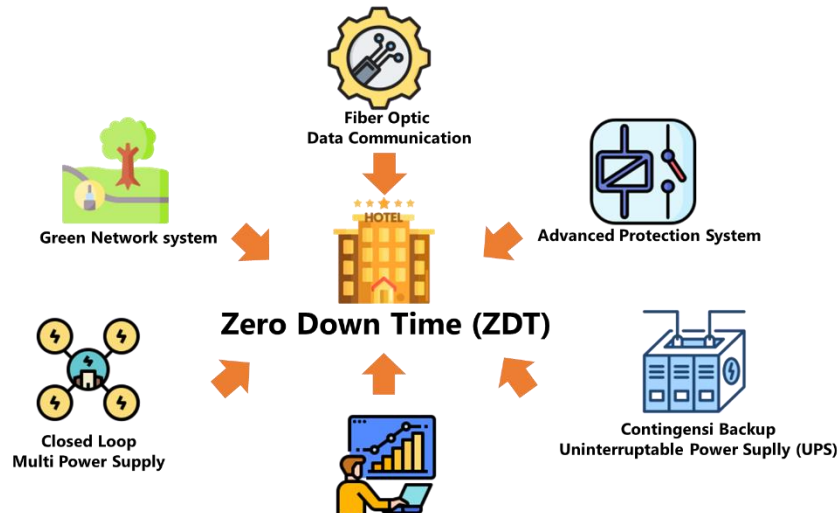


Figure 1. Zero Down Time (ZDT) System Overview

The ZDT scheme consists of 6 parts. Multi power supply which means that at least it is supplied from different power plants and 2 different substations with fully insulated cubicles. Then differential relay protection is integrated, automated, and monitored via SCADA by utilizing data network infrastructure through fiber optic. For aesthetics and green environmental , all of cable installations use underground cables. For contingency backup using uninterruptible power suply (UPS). With this Zero downtime system, Labuan Bajo is very worthy of being a super-priority tourism destination area with electricity services with no outage and no dip.

Outcome

With the Zero Down Time (ZDT) System, Labuan Bajo was declared feasible and has successfully become 17 major international events (including the G20 side event, 2023 ASEAN Summit, AMMTC, AARC). PLN will continue to perfect and develop the smart grid zero downtime method to support Labuan Bajo as Indonesia's Super premium Tourism Destination.