Report on Follow-up Tasks for JRE CO2 reduction for FY2024 (Summary Edition)

> March 2025 Mitsubishi Jisho Design Inc.

1. Background and Purpose

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In FY2019, we conducted a review and calculation of the CO2 reduction target for all owned buildings until FY2030. We also set a target to reduce 20,000t CO2 emissions by renovation work compared to FY2019.

Beside setting reduction targets, it is important to consider how to achieve CO2 reduction through renovation work. This year, We have been studying a roadmap for CO2 reduction until FY2030, monitoring the reduction effects of renovation work carried out in FY2023.

We have set a target of acquiring 5 to 10 ZEBs by FY2030. We conducted on-site study of selected ZEB candidate properties in FY2023 to improve the accuracy of certification acquisition for the following year (FY2025). We also discussed the possibility of certification acquisition for other properties.

Outline of business operations for FY2024

1CO2 reduction follow-up

 \Rightarrow Monitoring the reduction effects from the renovation work carried out in FY2023.

 $\textcircled{2}\mathsf{ZEB}$ conversion study

⇒Conducted simple calculations for ZEB candidates (total of 2 buildings) using the BEI simplified calculation system. Carried out a detailed study of a candidate project for ZEB certification in FY2023 (1 building). Additionally, obtained "ZEB Ready" certification for a large-scale office building exceeding 10,000m (1 building).

③Reduction Value Calculation Based on Internal Carbon Pricing

⇒Calculation of the equivalent amount applying Internal Carbon Pricing (ICP) from the expected reduction in CO2 emissions thanks to energy-saving renovation work. (For renovation work from FY2023 onwards)

4Individual case screening

⇒Conduct screening of energy-saving renovation work towards achieving the CO2 reduction target for FY2030.

2. JRE Amagasaki Front Building ZEB certification acquisition

Overview of JRE Amagasaki Front Building and details of ZEB renovation work.

Building overview

 Name : JRE Amagasaki Front Building
 Address : 2-6 Shioe 1Chome, Amagasaki City, Hyogo
 Floor Area : 19,927.41m⁴
 Use : Office, shop
 Number of floors : 10 floors above ground
 Air-conditioning system : Multiple packaged air conditioning unit system
 Ventilation system : Total heat exchanger on each floor
 Year of completion : 2008(Age of building 16years)

Proposed retrofits for ZEB conversion

Upgrade air-conditioning units to the latest model
 Optimization of air conditioning capacity
 Upgrade all lighting to LED lighting (750lx)
 Uses a normal version of the total heat exchanger

 $\operatorname{Wentilation}$ fans will be updated in the future



Energy-saving calculation results (submitted for approval) for JRE Amagasaki Front Building



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ZEB certification for JRE Amagasaki Front Building

Documents issued by BELS certification

BELS evaluation report

^{建築物省エネ法に基づく} 建築物の	字磁航景について 本評価航景は、EELS 評価業務方法事に使って評価を行ったものです。申請された影響により評価をし たものであり、評価を月日以降の計量変更や劣化をがないことを保証するものではありません。また、 建築物に範囲がないことを保証するものではありません。					
省エネ性能の 評価書 ^{第三者評価} BELS	エネルギー	消費性能	く段階表示の読み方: ★1つです。削減率が 加します。★の数が します。	▶ 国が定める省エネ基準※に が105向上する毎に★ が1つ3 多いほど高い省エネ性能をす	ま 増 有	
建築物省エネルギー性能表示制度	1	20	1	12		
746	☆再エネなしの一	次エネルギ ー 消費量	削減率 🐝太陽光発電分の)一次エネルギー消費量削減率		
物件概要 連物名称: JRE記崎フロントビル 所在地: 国際意思県西部省正示工目的1,003,004,005,004,005,004,005,004,005,004,005,004,005,004,005,004,005,005	再エネなし ^{削滅率} B 53% 0	ыща и віща и .47 53	再エネあり (自家端長分) 以本 BEI値 3% 0.47	再エネあり (自家湖東分+売電分) 削減率 BEI値 533% 0.47	1	
地域の区分:6地域 構造:S造 一部 SRC造 階数:地上10階 用途:事務所等 延べ面積:19,927.41㎡	<mark>達成項目</mark> ※速はしけ	と場合にのみ、チェック	マーク <mark>メ</mark> とZEBマークが表示され	ikt.		
申請者 氏名又は名称: ジャパンリアルエステイト投資法人 執行役員 加藤 譲	✓ ZEB水準 エネルギー消費性能 ☆5つ、病院等の用	が、事務所等の 途で 🚖 4つを達	✓ ネット・ 用途で ZEB Readyの 成	ゼロ・エネルギー 200 9要件は評価書をご覧くださ	tea beady しっ	
所在地: 東京都千代田区大手町一丁目1番1 号 大手町パークビル	再エネ設備					
評価概要		種類	容量			
評価対象: 建物(非住宅建築物 全体)	設備なし	-	-			
評価手法※1: 通常の計算法(平成28年基準)			•			
• XMLID :						
daa4a73-295d-4958	評価情報					
81 平成28年基準とは、建築物エネル ドー消費性能基準などを定める省令(評価年月日 20	25年3月14日	評価書交付番号 002-01-2	025-00106		
平成28年秘済産業省令・国土交通省令 第1号)に基づく基準をいいます。	評価機関名 一般財団法人日本建築センター					
	評価員氏名	評価員氏名 高橋 徽				

一次エネルギ	一消費性能			
判定(算定)結果	[GJ/戸・年]			
	設計一次エネルギー消費量		費量 判定(※2)	
省エネ基準	25,072.4	42,298.2	達成	7
省エネ基準 大規模非住宅)(※1)	25,072.4	35,840.5	35,840.5 達成	
誘導基準	25,072.4	29,382.7	達成	
断熱性能				
判定(算定)結果				
	BPI值	BPI値の基準値	判定(※3)	
省エネ基準	_			
誘導基準		1.0	—	7

総合判定	総合判定				
判定(算定)結果	判定(算定)結果				
	判定(※4)				
省エネ基準	達成				
省エネ基準 (大規模非住宅)	達成				
誘導基準	-				

特記項目					
再生可能エネルギーを除いた設計-次エネルギー消費量 の基準-次エネルギー消費量からの削減率(※6)		53% %		ZEB Ready マークの要件 ※①・② 全てを 満たす	●再生可能エネルギーを除く削減率が50%以上 ※部分評価の場合、建築物全体で再生可能エネルギー
再生可能エネルギーを加えた設計一次エネルギー消費量 の基準一次エネルギー消費量からの削減率(※6)					を除く削減率が20%以上であることも必要。 9再生可能エネルギーを含んだ削減率が75%未満
ZEBマークに関する事項		ZEB Re	eady		
金考様和 ※以下については 際価計会所の項目となります 由					(由請考が複数タいる際に表示)
建業初の竣工・収修時期				1100101	
峻工時期 2008年10月31日	改修時期	2026年3月31	B	氏名又は名称:	
日安光熱費				MITTAE -	

申請者 3 氏名又は名称 所在地: 申請者 4 氏名又は名称 所在地: 申請者 5 氏名又は名称 所在地: ※6 削減率とは、設計一次エネルギー消費量(その他一次エネルギー消費量除く)の基準一次エネルギー消費量(その他一次エネルギー消費量除く)からの削減率 をいいます。また、再生可能エネルギーの対象は敷地内(オンサイト)に限定し 自家消費分に加え、売電分も対象に含みます(ただし余剰売電に服る。)。 <本評価書について>本評価書は、「建築物のエネルギー消費性能に関し販売事業 者等が表示すべき事項及び表示の方法その他建築物のエネルギー消費性能の表示 に際して販売事業者が遵守すべき事項(令和5ヶ田三年市) に際して販売事業者が遵守すべき事項(令和5ヶ田主交通省合示第 970 号)」に 基づく「建築物のエネルギー消費性能の評価書」です。建築物のエネルギー消費 生化的の山上に関する法律などの法令への適合を証明するものではありません。また、住宅の品質確保の促進等に関する法律に基づく住宅性能評価書ではありませ ん。基準の達成・非達成の判定は、設計値と基準値の比較によるものであり、単

位の換算や有効数値の扱いにより削減率等の数値と整合しない場合があります。

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対象外

その他の道言

ZEB certification for JRE Amagasaki Front Building

Documents issued by BELS certification



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3. Follow-Up Studies on CO2 emissions reduction

Follow-up on CO2 emissions reduction in FY2024

Follow-up on CO2 emissions reduction in FY2024

• We calculate the CO2 reduction amount from energy-saving measures implemented in FY2023 and updated the progress chart of reduction by calculating the total reduction amount since FY2019.

Approach to CO2 Reduction Effect by the Renovations Conducted in FY2023

Calculation was performed for all energy-saving renovation work according to the following procedure.

- We confirmed the overall volume of air conditioning and lighting work for each building and assessed the update rate by comparing it to the volume (capacity of equipment, number of lighting fixtures, etc.) of the 2023 work. Consideration was also given to the ownership percentage.
- For the FY2023 projects, the reduction effect was calculated by multiplying the reduction rate to the evaluated reduction amount (Case I: updating with the same capacity) that was assessed in the FY2019 work.

Follow-up on CO2 emissions reduction in FY2024



4. Studies on ZEB Conversion

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Approach to considering ZEB conversion

ZEB conversion investigation flow

STEP1: Understanding Current status of each building

Understanding of building basic data, equipment specifications and renovation status

STEP2 : Selection points and extraction of ZEB conversion investigated properties

After organizing the points for ZEB conversion selection, extract and narrow down candidate properties

STEP3: Implementation of rough calculations

Perform rough calculations for candidate properties to confirm selected properties have the potential for ZEB conversion



STEP4 : Investigation of selected candidate properties for ZEB conversion

Proposal of renovation specifications for ZEB conversion and determination of renovation specifications based on energy-saving calculations for selected properties



STEP5: Implementation of ZEB acquisition application

Create BELS application drawings and acquisition of certification based on determined renovation specifications (scheduled for FY2025 and beyond)

Verification results (simple calculation) for Building A

◇Building overview

Location : Tohoku area Floor area : More than 25,000m⁴ Age of the building : More than 15 years Air-conditioning system : Multiple packaged air conditioning unit system Ventilation system : Total heat exchanger on each floor

 \Diamond <u>Conditions for renovation study</u>

- ①Upgrade air-conditioning units to the latest model
- ②Optimization of air conditioning capacity
- ③Upgrade all lighting to LED lighting *1
- ④Review of specifications for heat exchangers
- ⑤Changing from simultaneous heating and cooling to switching between heating and cooling
- %1 LED illumination is equivalent to current conditions.

⇒It is possible to aim for "ZEB Oriented" with the measures up to ④.

\Diamond Simple calculation results for ZEB BEI



Verification results (simple calculation) for Building B

◇Building overview

Location : Kansai area Floor area : More than 15,000m¹ Age of the building : More than 15 years Air-conditioning system : Multiple packaged air conditioning unit system Ventilation system : Total heat exchanger on each floor

\Diamond Conditions for renovation study

①Upgrade air-conditioning units to the latest model

②Optimization of air conditioning capacity

③Upgrade all lighting to LED lighting ^{*1}
 ④Changing from simultaneous heating and cooling to switching between heating and cooling

- %1 LED illumination is equivalent to current conditions.
- ⇒By further improving the efficiency of air conditioning and ventilation systems, it is possible to aim for "ZEB Oriented".

Simple calculation results for ZEB BEI



Verification results (simple calculation) for Building C

◇Building overview

Location : Tokyo Floor area : Less than 5,000m² Age of the building : More than 15 years Air-conditioning system : Gas-fired multiple packaged air conditioning unit system Ventilation system : Total heat exchanger on each floor

\bigcirc Conditions for renovation study

- ①Upgrade air-conditioning units to the latest model
- ②Optimization of air conditioning capacity
 ③Upgrade all lighting to LED lighting
 ④Consideration of changing from a gas-fired multi-packaged air conditioning unit system to an electric multi-packaged air conditioning unit system
- ⇒The change from GHP to EHP may help to achieve "ZEB Ready".
- ⇒Various studies confirmed that ④ above is feasible.
- ⇒Lifecycle costs expected to go down.

Simple calculation results for ZEB BEI



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Toward the future ZEB certification in JRE portfolio

Conclusion for ZEB conversion investigation in FY2024

- Continuing from FY2023 study (3 properties), a simple evaluation was conducted on 3 properties for the ZEB conversion study in FY2024. The outcome of the simple evaluation show that 3 of the building have the possibility of attaining ZEB by applying specific measures for that purpose.
- With the acquisition of ZEB certification for the JRE Amagasaki Front Building, we have achieved 5-10 ZEB buildings as committed in KPI. Going forward, JRE and Mitsubishi Jisho Design Inc. *(hereinafter "MJD") will continue to evaluate the actual condition of properties in the portfolio and to study potential ZEB conversions.
 - The results of this verification illustrate the potential for MJD Renovation Design Department. We aim to further evolve by proactively promoting environment-related initiatives such as carbon neutrality and ESG investment.