經濟部

行政院所屬各機關因公出國人員出國報告

（出國類別：其他活動）

參訪日本海事協會（ClassNK）、新能源及產業技術總和開發機構（NEDO）、富士電機、電線總合技術中心（JECTEC）與製品評價技術基盤機構（NITE）技術合作會議

服務機關：經濟部標準檢驗局
姓名職稱：副組長楊紹經、技士吳昌圖
派赴國家：日本
出國期間：106 年 11 月 13 日至 18 日
報告日期：107 年 1 月 19 日

摘　要

為落實國內能源結構轉型發展，加速綠能發展及確保綠電來源及品質，本局推動建構再生能源憑證制度，以協助國內再生能源憑證推廣及國際交流；建立再生能源憑證資訊平台，提供產業及金融機構投資再生能源之數據分析。依據 106 年度「再生能源憑證中心及檢測驗證發展計畫」科發基金計畫第 6 項派員出國參訪，行程摘要如下：

11 月 14 日上午參訪日本海事協會（ClassNK），討論風力機再生能源查驗系統技術交流。

11 月 14 日下午參訪新能源產業技術綜合開發機構（NEDO），瞭解再生能源查驗系統技術交流。

11 月 15 日參訪富士電機吹上工廠，瞭解風力機及太陽光電發電系統使用之斷路器試驗場設備建置與技術交流。

11 月 16 日上午參訪日本電線電纜技術中心（JECTEC），瞭解風力機及太陽光電發電系統使用之電纜試驗規範與方法與技術交流。

11 月 16 日下午拜會日本經濟產業省及消費者廳官員，瞭解日方有關商品標示制定之依據及管理制度，並為我國商品標示基準與國家標準相關標示競合之問題。

11 月 17 日參訪製品評價技術基盤機構（NITE）東京製品安全技術中心，討論再生能源太陽光電發電系統之檢測驗證與技術交流，並與日方進行一般商品定期技術會議，除進行事故分析技術與經驗交流，另配合本局

發展再生能源（太陽光電與風電等）事故分析技術，共同發展商品事故分析與鑑定技術。

目　次

摘　要 I
目　次 III
圖　次 IV
表　次 V
壹、　背景及目的說明 1
貳、　行程簡述 3
參、　出席團員名單 4
肆、　過程紀要 4
伍、　心得及建議 35
附件 1 NEDO 在 2017 年推動再生能源重要工作 38
附件 2 富士電機簡介 38
附件 3 JECTEC 簡介及簡報 38
附件 4 家庭用品品質表示法手冊 38
附件 5 「臺日強化產品安全領域第 1 次實務階層定期會議」簡報 38

圖　次

圖 1 ClassNK 與本局人員會後合影 6
圖 2 NEDO 與本局人員會後合影 10
圖 3 展示室直流斷路器 14
圖 4 風力發電系統之斷路器 14
圖 5 燃料電池系統之斷路器 15
圖 6 富士電機與本局及台灣電子檢驗中心人員參訪展示室後合影 15
圖 7 富士電機與本局及台灣電子檢驗中心人員參訪後合影 16
圖 8 參觀電線電纜材料拉伸試驗設備 18
圖 9 電線電纜材料試驗治具 18
圖 10 參觀電線電纜扭曲試驗設備 19
圖 11 參觀電線電纜材料紫外線試驗設備 19
圖 12 參觀電線電纜燃燒試驗設備 20
圖 13 JECTEC 與本局及台灣電子檢驗中心人員參訪後合影 20
圖 14 拜會 NITE 辰巳敬理事長後合影 25
圖 15 METI 和田恭課長致詞 29
圖 16 NITE 簡報太陽光電事故案例 32
圖 17 ETC 簡報太陽光電 33
圖 18 技術交流會議（1） 33
圖 19 技術交流會議（2） 34
圖 20 NITE 與駐日經濟文化辦事處、本局及 ETC 人員會議後合影34

表　次

表 1 日本法規之主管機關與承辦單位及執行機關 22

壹、背景及目的說明

一、參訪日本海事協會

本局與日本海事協會在小型風力機驗證技術上已有初步成果，透過臺日雙方驗證合作，成功協助國內小型風力機廠商至日本布建等實績，目前更進一步配合國內發展離岸風力機產業，共同推動離岸風力機驗證技術，配合臺灣與日本特有地理氣象環境，分別完成制定抗颱耐震等國家標準，進行風力機標準與聯合驗證技術之交流，加強雙方「離岸風力機場驗證技術」國際合作關係，討論未來合作事項，以加速本局離岸風場專案驗證能量建置，擴大臺日雙方離岸風力機驗證技術建置與驗證合作事宜。

二、參訪新能源產業技術綜合開發機構

為協助國內離岸風力機產業發展，建置驗證能力以協助國內離岸風力機廠商取得國際驗證，本局與日本國立研究開發法人新能源產業技術綜合開發機構（NEDO）共同合作，推動本部交辦之「日製離岸風力機技術系統實證計畫」，規劃於臺灣海域風場建置離岸風力機進行海上實證研究，本計畫已完成第一階段實證前可行性調查之工作，分別完成離岸風力機安裝及實證作業檢測評估之安全標準調查、國內風力機產業發展現況普及性調查及預備簽訂計畫合約與時程規劃評估等實證作業規劃調查作業，同時進行相關資料蒐集及

評估作業，未來將進行臺灣海域進行離岸風力機建造與環境及發電性能等數據收集及分析等實證作業，討論及推展本計畫後續發展方向。

三、參訪富士電機吹上工場

瞭解風力機及太陽光電發電系統使用之斷路器試驗場設備建置，並藉由實際參訪生產線，更加瞭解開關產品之結構。

四、參訪日本電線總合技術中心（JECTEC）

瞭解再生能源系統使用的電纜有關電性與物性試驗項及其方式，技術交流與洽談合作備忘錄（MOU）可行性。

五、參訪日本製品評價技術基盤機構（NITE）討論太陽光電發電系統之檢測驗證技術交流暨舉行「臺日強化產品安全領域第 1 次實務階層定期會議」

參訪 NITE 討論太陽光電發電系統之檢測驗證技術交流暨「臺日強化產品安全領域第 1 次實務階層定期會議」（東京）討論失效調查與技術交流，並瞭解 NITE 對再生能源太陽光電模組發電系統之事故發生原因及案例分享。

貳、行程簡述

日　　期	地　　點	工　作　內　容
106 年 11 月 14 日	ClassNK（東京）	拜會 ClassNK 討論離岸風場驗證技術交流與意見交換。
	NEDO（東京）	拜會 NEDO 討論日製離岸風力機技術系統實證計畫與意見交換。
106 年 11 月 15 日	富士電機（埼玉縣）	參訪富士電機吹上工場瞭解風力機及太陽光電發電系統使用之斷路器試驗場設備建置
106 年 11 月 16 日	JECTEC（靜岡縣）	參訪日本電線電纜技術中心 JECTEC 瞭解風力機及太陽光電發電系統使用之電纜試驗規範與方法
	經產省消費者廳（東京）	瞭解商品標示制定之依據及管理制度
106 年 11 月 17 日	NITE（東京）	參訪日本 NITE 討論太陽光電模組發電系統之檢測驗證技術交流暨參加 MOU 定期會議

參、出席團員名單

單位	姓名	職稱	備註
經濟部標準檢驗局第六組	楊紹經	副組長	
經濟部標準檢驗局第六組	吳昌圖	技士	
經濟部標準檢驗局第五組	黃于稹	科長	參與 11 月 17 日行程
經濟部標準檢驗局第五組	王慧玲	秘書	參與 11 月 17 日行程
財團法人台灣電子檢驗中心	蕭育宜	課長	參與 11 月 16~17 日行程
財團法人台灣電子檢驗中心	陳信吉	組長	參與 11 月 14~17 日行程
財團法人台灣電子檢驗中心	謝佩青	秘書	參與 11 月 16~17 日行程

肆、過程紀要

一、 拜會 ClassNK 討論離岸風場驗證技術交流與意見交換

（一） Class NK 簡介

日本海事協會為一船級協會，簡稱 ClassNK 或 NK，致力於發展船舶安全性及海洋環境保護，其提供高品質的船舶分類及驗證服務、發展相關的指引、規範及程序、主導海事工程技術研究，全球約有 130 個辦公室。ClassNK 也提供國際標準組織（ISO）、職業衛生安全評估體系（OHSAS）及其他國際標準的稽核驗證服務，並為材料與設備製造商及售後服務業者提供稽核與登錄服務。在再生能源技術方面，ClassNK 可提供風力發電機、專案、風場及離岸浮體

式風力發電機之驗證服務，而風力發電機之驗證包含設計驗證、型式認可及原型（prototype）驗證等。

（二） ClassNK 會面人員

赤星 貞夫 部長
河口 創生 主任技師
羅 亞星 業務

（三） 會議紀要

1. 首先 NK 關心台電公司辦理離岸風場招標案最新情形，未來 NEDO 推動與臺灣第二期實證計畫時程與本案發展有關，需等台電公司決標後，儘速就合作廠商展開技術合作事宜。
2. 日本在九州浮體式離岸風電案場開發採行公開招標作業方式，最後只有一家參與，由日本廠家主辦，主要是法國提供設計規格交由日本製造（成本考量），因日本規定離岸風電案場建造經費中不可超過總經費之 50%由國外公司辦理。
3. NEDO 的計畫屬全國性新能源發展項目，涉及公平性的考量，不宜僅對日立一家處理。
4. 目前北九州離岸風場實證，第一座預估在 2018 年夏天完成建置。
5. 福島第三座離岸風機已完工，尚需要一年半蒐集天候及發電量等各項數據。

6. 戶田建築在長崎 20MW 浮體式離岸風機計畫之細部規格尚未確認，主要分 10MW 兩區塊，每一區塊是 2MW 五支或 5MW 二支。

圖 1 ClassNK 與本局人員會後合影

（吳昌圖技士（左 1）、楊紹經副組長（左 2）、赤星貞夫部長（右 2）、河口創生主任技師）

二、 拜會 NEDO 討論日製離岸風力機技術系統實證計畫與意見交換

（一） NEDO 簡介

新能源及產業技術總合開發機構（New Energy ane Industry Technology Development Organization；NEDO）成立於 1980 年 10 月，在第二次石油危機之後不久，原先專門從事新能源專門技術之

開發，但在 1988 年起增加新產業基礎科技之研發，1996 年 10 月與煤礦災害事業團合併，加上 NEDO 的前身是煤礦業合理化事業團，因此 NEDO 目前有 6 項主要業務，分別是 1.新能源及省能源技術之開發與引進、2.產業技術的研發、3.煤礦工業結構改善、4.酒精製造事業、5.煤礦災區賠償以及 6.酒精製造等。

NEDO 是由日本官方以及民間集結資金、人力以及技術力組織而成，但是主要資源來自通產省（METI），通產省中的資源能源廳、工業技術院以及基礎產業局共同管理。至 2000 年 3 月底為止資本額是 4,297 億日圓，共有 1086 名職員。NEDO 本身並無研究人員，因此它是政府與民間企業間之中介機構，接受政府之委託或補助，委託民間企業或是技術研究組合作研發工作。

（二） NEDO 會面人員

新能源部 近藤 裕之 部長
新能源部 伊藤 正治 統括研究員
新能源部 遠藤 航介 風力海洋能源研究員
新能源部 馬場 惠里 主查

（三） 會議紀要

1. 目前 NEDO 的業務中以新能源及省能源技術開發和產業技術開發為主，由於所從事的研發工作多屬基礎或是應用研究，而且多屬大型計畫，更具前瞻性，因此以由多家企業組成之研究

組合來承接委託案件為多。NEDO 對於委辦案有 4 項責任，分別是 1.審查委託計畫民間參予者的資格 2.監督委託案件之執行，3.管理及移轉委託研究計劃的成果，4.促進國際間產業科技之合作與交流。至於研發主題之決定大都由工業技術院指定而來，也有小部份是由通產省各廳各課對業者調查而來，或是來自 NEDO 本身之建議。

2. 首先，基礎研究或是創新研究計畫經費由通產省工業技術院編列預算，交由 NEDO 執行。NEDO 通常會將通過可行性評估研究之計畫案，透過"通產省公報"公布周知，然後大約 2 週後召開計畫之公開說明會，說明計畫內容及申請時所需備妥的文件，說明會後大約 6 週必需提出計畫申請書，申請人資格除了可以是國內外民間單位企業外，也可以是研究所或是財團法人或是研究組合。研究組合是臨時性組織，計畫完成後就解散，其他團體則為長期性組織。研究組合也可以是民間企業團體與研究所共同合作技術研發。

3. 審核是由 NEDO 設立的審議會來執行，成員包括 3-4 名經歷豐富的教授或是國立研究所的研究人員組成，除了審核申請者之資格外，申請書的內容必須符合委託計畫之目標，而且研究辦法必須為實際可行，申請書所提經濟利益必須是適切的，然後再參酌通產省的意見作綜合判斷。委託是採競標方式，一般由

民間企業得標較多，但可以再委託大學共同研發。選定得標廠商後，再由 NEDO 與其簽訂「委託契約書」，內容包括委託期間、費用使用、報告之提出、研究設備之處理以及研究成果之權利歸屬等之規定。

4. 一般來說，NEDO 委託之研發案件之執行有三種方式，分別是集中研究、各自研究以及折衷方式三種。（1）集中方式大部份屬基礎研究，如原子、分子操作技術等，由參與企業各派人員集中在某一場地共同研究。（2）各自研究則由參與企業或是團體依其專長各自研發其專長領域，再集結而成，屬於應用研究較多，例如陶瓷工業計畫等。至於（3）折衷方式則有部份集中共同研發，部份各自研發。集中研發以在國立研究所內共同研發為多，因為是基礎技術而且也較需研發設備。至於研發成果依「產業活力再生法」之規定，研發企業可以擁有 100% 之所有權，如此一來有利於技術之實用化與提升產業界之技術能力。

5. NEDO 係屬 METI 下一個財團法人機構，協助經產省執行重要政策，其中新能源技術部門是今天拜訪對象，由新能源技術部近藤裕之部長接見，並進行簡報。

6. NEDO 自 1980 年第二次石油危機以來，持續推動新能源技術研發，包含太陽光電、地熱、生質能、風力發電、燃料電池、

氫能、燃料電池車輛等。

7. 國際能源總署（IEA）預期全球電力目標是將再生能源從 2013 年的 22%成長至 2040 年的 33%，目前各國除研發再生能源新興技術外，對各領域之橫向連結或整合，是更重要的課題。

8. 日本為降低每年增加 FIT 預算，未來對太陽光電發電系統設置在 2MW 以上者，將逐年調降 FIT 費率。

9. 邀請 NEDO 來臺專題演講有關新能源技術發展計畫及未來合作事宜，窗口由 NEDO 國際部協助後續聯繫事宜。

圖 2 NEDO 與本局人員會後合影

（吳昌圖技士（左 1）、楊紹經副組長（左 2）、近藤裕之部長（左 3）、伊藤正治研究員（右 3）、遠藤航介研究員（右 2）、馬場惠里主查（右 1））

三、 參訪富士電機吹上工場

（一） 富士電機吹上工場簡介

日本富士電機創立於 1923 年，著重於環境與創新能源技術，在工業領域和電力基礎設施上，開發高能源效率產品以滿足業界之需求。日本富士電機有五大事業體，包含電力基礎設施（Power and Social Infrastructure）、工業基礎設施（Industrial Infrastructure）、電力電子裝置（Power Electronics）、電子產品（Electronic Devices）、食品和飲料銷售物流（Food and Beverage Distribution）等事業體。

吹上工場成立於 1943 年，位於埼玉縣，該工場在富士電機是歷史悠久的核心工場，員工約 800 人。負責電氣系統之配電設備和控制設備開發和生產，從開發、設計到採購零部件加工和產品組裝，全部自行完成。主要產品有直流高速度真空遮斷器、電磁開關、高壓配電設備等。

（二） 富士電機接待人員

富士電機 齊藤 英樹 第一工務課 課長
武內 志乃夫 技術管理課 課長輔佐
津田 凌子 技術管理課
津田 修平 第一營業課
富士電機 陳彥宏 營業工程師（台灣）

（三） 參訪紀要

1. 齊藤課長簡報富士在吹上的重要業務，富士年銷售額約 8400

億日圓，以低壓及高壓配線用與器具用開關為主，低壓設備在2016 年產值約 680 億日圓，目前有五個工廠，三個在國內，二個在國外，國內分別為琦玉縣吹上工廠(790 人，成立於 1973 年，廠區占地約 5 萬 m^2，以電磁開關及真空斷路器為主)，秩父工廠（510 人，成立於 1967 年，廠區占地約 38 萬 m^2，以配電盤開關及按鈕開關為主）及大田原工廠（以 NFB 為主)，國外為大連工廠（1994 年成立，720 人，廠區占地約 5 萬 m^2）及江蘇工廠（廠區占地約 3 萬 m^2)。吹上工廠另有產品研發與測試中心，符合品質保證規範。

2. 展示室（TECHNO LAB）有展示新能源產業所需要的各式低壓與高壓開關設備，該公司產製電磁開關佔日本 50%市場，高壓產品佔日本 20%市場，
3. 變流器產品製造在鈴鹿工廠。
4. 參觀工廠生產線，電鍍作業自動化，高壓產品製程規格化，生產線具備電腦資訊工序檢查系統，以減少人為錯誤案例，零組件置放區有專人管理(配戴紅帽子)及放入生產線排程，簡化生產線流程，平均一天可生產 150 台真空斷路器。
5. 電磁接觸器在日本市占率有 50%以上，目前分工是小容量在吹上工廠製造，中容量在秩父工廠製造，大容量在大陸廠區製造，最大差異是小容量在日本已是自動化生產，自下單後 24

小時內可以出貨，一條產線約 80 公尺，共有四條生產線，平均每一台製造時間約 5-7 秒，可生產約 6000 種規格的電磁接觸器，每月生產線約 130 萬台，因富士在 30 年前就投入自動化生產流程，現在正積極推動簡化型自動化生產及智慧機械

6. 開關類最重要的短路試驗也建置在吹上工廠，目前具備短路試驗用發電機及採用市電電源等兩種電力來源，差異是短路試驗用發電機可以調整輸出電壓及頻率，可用來測試不同地區的電力系統需求，據了解建置短路試驗用發電機之測試設備經費約需新台幣 5 億元。

7. 有關本組執行斷路器短路試驗用直流電源電壓會有漣波現象，經詢問富士試驗室人員，直流電源經交流整流器後就會有此漣波現象，係屬正常情形，只要依標準測試條件進行測試即可，若對漣波的測試規範要求，仍需要找尋資料庫提供才能進一步消息。

圖 3 展示室直流斷路器

圖 4 風力發電系統之斷路器

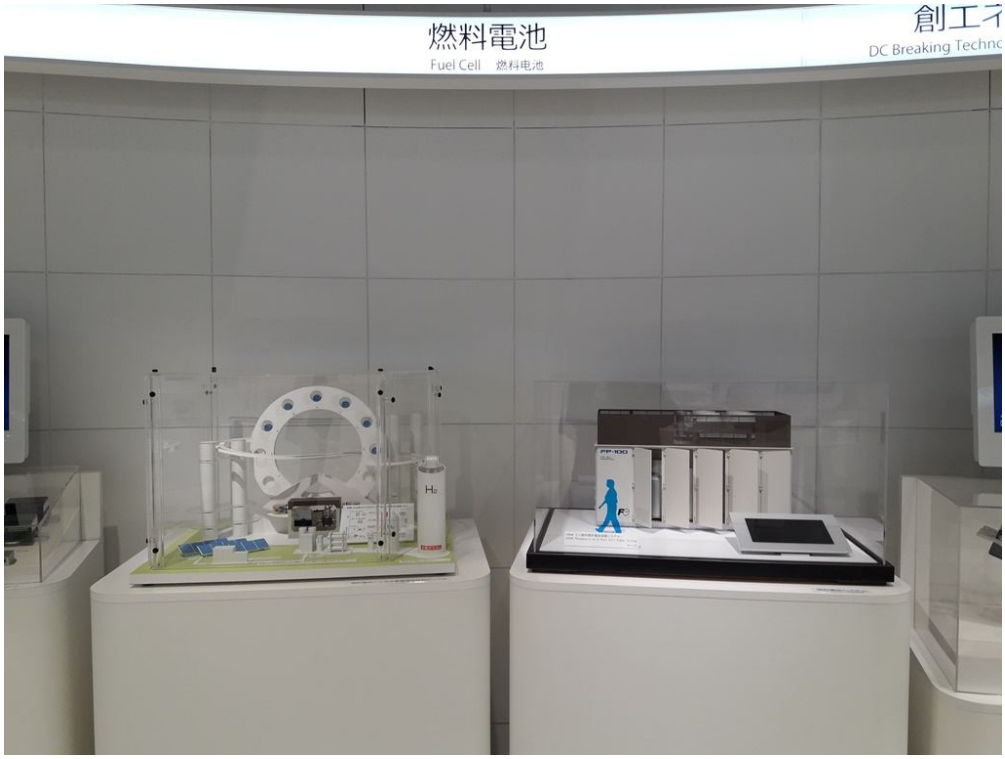


圖 5 燃料電池系統之斷路器

圖 6 富士電機與本局及台灣電子檢驗中心人員參訪展示室後合影

（富士電機津田凌子（前排左 1）、本局楊紹經副組長（後排左 1）、ETC 陳信吉組長（後排左 2）、本局吳昌圖技士（右 3）、富士電機津田修平（右 2）、台灣富士電機陳彥宏（右 1））

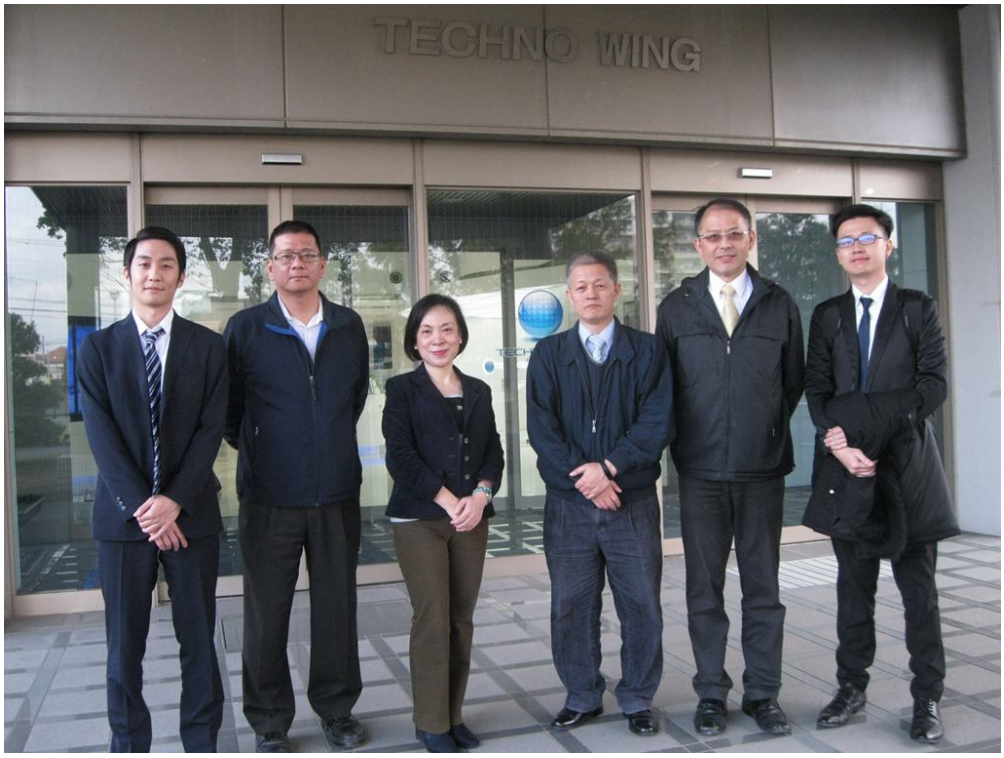


圖 7 富士電機與本局及台灣電子檢驗中心人員參訪後合影

（富士電機津田修平（左 1）、ETC 陳信吉組長（左 2）、富士電機津田凌子（左 3）、本局吳昌圖技士（右 3）、本局楊紹經副組長（右 2）、台灣富士電機陳彥宏（右 1））

四、 參訪一般社團法人電線總合技術中心（Japan Electric Cable Technology Center，JECTEC）

（一） JECTEC 簡介

JECTEC 成立於 1991 年，是日本電線電纜業者合作試驗與研究機構。其主管部門為經產省（METI），以促進高等技術電線電纜的安全性和可靠性，並配合環境保護與電線電纜新技術之研發。JECTEC 一直專注於研究和開發領域，同時評估電線和電纜的符合性評定與資訊服務。近期顯著的變化是在符合性評估測試工作的擴展，JECTEC 逐漸從研究與設計實驗室演變成為符合 ISO/IEC 17025

試驗室的檢測機構，持續加強電線電纜檢測技術作為第三方檢測機構和驗證機構。

（二） JECTEC 接待人員

JECTEC 田邊 信夫 資深經理　社長

JECTEC 平田 晃大 教育與訓練 副主席

JECTEC 深谷 司　試驗認證部 部長

JECTEC 袴田 義和 工程師

（三） 參訪紀要

1. 簡報內容特別針對 IEC 標準、日本標準以及日本引用 TUV 標準電線試驗內容標準之差異說明。

2. 目前 JECTEC 的主力業務範圍是日本國內，工作內容則是配合日本政府和國內市場需求進行檢測及研發，並培訓各公司行號技術人員及現有單位之電線法規相關內容。目前合作觸角尚未往海外發展，後續將規劃進行國際合作。

3. 若有合適的機會，JECTEC 有意願與台灣電子檢驗中心(本局電線電纜指定試驗室)進一步合作，或可規劃先簽署合作備忘錄（MOU），對雙方在電線電纜檢測技術方面，可展開更緊密的合作事項。

4. 參觀 JECTEC 電線電纜大型檢測儀器及實驗室介紹，多數設備採用歐美進口的檢測設備，參訪過程中也有分享在日本國內外各種設備的優缺點，提供我們參考。

5. JECTEC 在 107 年行程安排若有機會到臺灣，希望有機會拜會

本局及參訪台灣電子檢驗中心與相關廠商。

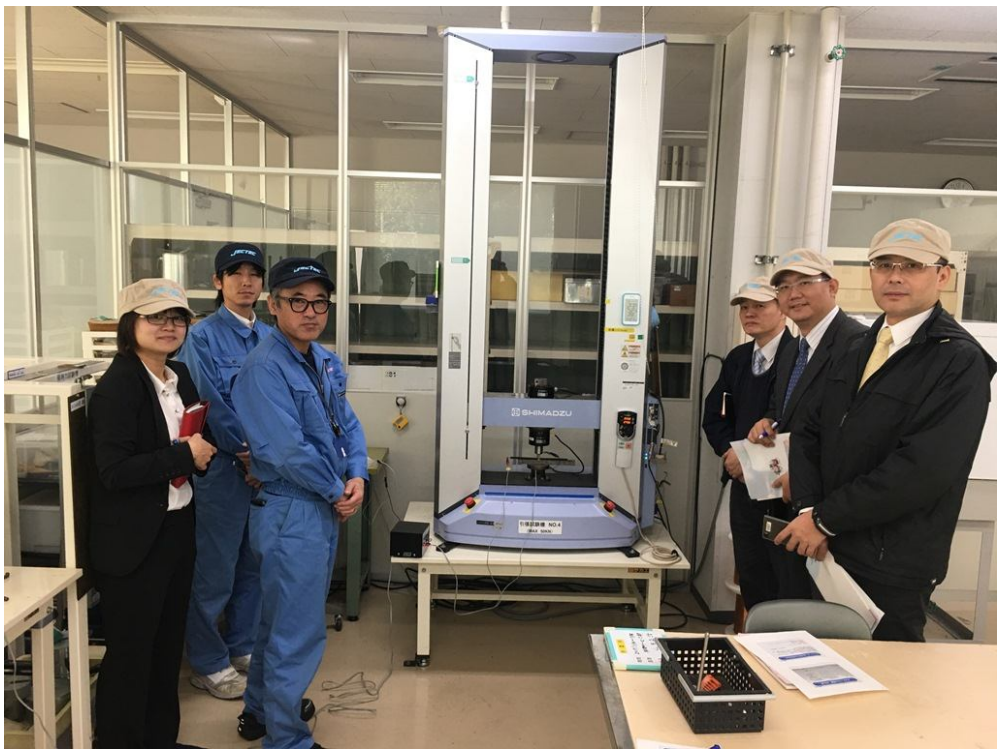


圖 8 參觀電線電纜材料拉伸試驗設備

圖 9 電線電纜材料試驗治具

圖 10 參觀電線電纜扭曲試驗設備

圖 11 參觀電線電纜材料紫外線試驗設備

圖 12 參觀電線電纜燃燒試驗設備

圖 13 JECTEC 與本局及台灣電子檢驗中心人員參訪後合影

（ETC 謝佩青秘書（前排左 1）、本局吳昌圖技士（前排左 2）、JECTEC 田邊信夫（左 3）、本局楊紹經副組長（右 3）、ETC 蕭育宜課長（左 3）、ETC 陳信吉組長（後排左 1）、JECTEC 平田晃大（後排左 2）、JECTEC 袴田義和（後排左 3））

五、 拜會經濟產業省（METI）產業技術環境局及消費者廳

（一） 日本經濟產業省（METI）簡介

日本經濟產業省（METI）隸屬日本中央省廳，其前身為通商產業省，相對應我國政府組織為經濟部，METI 的使命是發展日本經濟和工業，重點是促進民營企業的經濟活力，順利推展對外經濟關係，確保能源和礦產資源的穩定供應及保持高效率。其廣泛行使許可權與行政指導，此外，為因應通商、貿易、技術革新，而投入科學技術開發相關工作，並掌握特許、能源政策、中小企業政策等廣泛權限。

（二） 日方與會人員

經產省 永田 邦博 國際標準課 課長補佐

折尾 大樹 基準認證經濟連攜室國際協力係長

峯 孝広 消費者廳表示對策課家庭用品品質表示担当

小椋 容一 景品表示調查官

（三） 會議紀要

為確保消費者權益，日本制定「家庭用品品質表示法」（Household Goods Quality Labeling Law）規定一般家庭用品標示之遵守原則，其主管機關為消費者廳（CAA），本次消費者廳出席人員於會中向我方說明其四大分類商品（紡織品、塑膠用品、家用電氣用品及其他雜項消費品）之相關標示規定，日本現行標示規定原則上不會造成法規重複規定及增加廠商標示成本，因其主要依據日本工業標準（JIS）之標示要求，另依產品類別及特性增列必要項目

（Additional items）。我方代表說明目前面臨商品標示基準與國家標準相關標示之競合之問題，日方表示 8 年前亦面臨類似問題，自 2009 年設立消費者廳（CAA），多次召開內部檢討會並於各項草案擬定時，會聽取各方意見（METI、業界、專家等），彙整後由其調和、修法，解決法規競合的問題，會後留下聯絡窗口保持後續交換意見及合作管道。

釐清日本在家庭用品品質表示法、電氣用品安全法、消費生活用製品安全法之主管機關、承辦單位及執行機關如下表：

表 1 日本法規之主管機關與承辦單位及執行機關

法規名稱	主管機關	承辦單位	執行機關
家庭用品品質表示法 Household Goods Quality Labeling Act	消費者廳	表示對策課	經產省 消費者廳
電氣用品安全法 Electrical Appliance and Material Safety Law	經產省	商務情報政策局 製品安全課	經產省各分局 地方政府
消費生活用製品安全法 Consumer Product Safety Act	經產省	商務情報政策局 製品安全課	經產省各分局 地方政府

六、 參訪日本 NITE 討論太陽光電模組發電系統之檢測驗證技術交流暨參加 MOU 定期會議

（一） 獨立行政法人製品評價技術基盤機構（NITE）簡介

日本獨立行政法人製品評價技術基盤機構（National Institute of Technology and Evaluation；NITE）成立於 1928 年 2 月，主要檢驗出口絲織品及羊毛織品，隨著工業化及政府組織改造，逐漸轉型為

以提供科技知識為主之科技服務。目前該機構組織有生化技術本部、化學物質管理中心、計量認定中心及生活福祉技術中心等單位；其中有關產品事故原因調查的部分，主要是由生活福祉技術中心負責，針對相關產品發生事故或失效之原因進行調查、分析及研究等工作，並提出具體對策，以防止產品事故或失效事件再度發生

（二） 日方與會人員

日本台湾交流協会 舟町 仁志 專務理事

角田 径子 副長

經濟產業省 和田 恭 製品安全課 課長

小町 僚明 製品安全課 課長補佐

橋爪 優文 製品安全課 室長補佐

木村 欣央 製品安全課 国際担当補佐

中村 光希 製品安全課 総刮係長

NITE 辰巳 敬 理事長

新井 勝己 製品安全中心 所長

吉津 兼人 製品安全中心製品安全企劃課 課長

吉田 英雄 製品安全中心製品安全業務課 調查官

山田 幸子 製品安全中心風險評價情報課 專門官

田崎 茂 製品安全中心技術業務課 職員

政川 喬洸 製品安全中心技術業務課 職員

（三） 我方與會人員

台北駐日經濟文化辦事處 周 立 組長

何天賜 秘書

標準檢驗局 楊紹經 副組長

黃于稹 科長

王惠玲 秘書

吳昌圖 技士

台灣電子檢驗中心 蕭育宜 課長

陳信吉 組長

謝佩青 秘書

（四） 會議議程

日期	時程	內容
11/7	09:45~10:00	拜會 NITE 理事長
	10:00~12:00	第一次實務階層會議
	12:00~13:30	午餐
	13:30~15:30	雙方技術交流

（五） 政策面會議紀要

1. 拜會 NITE 理事長

上午 9 時 45 分我方代表由本局第六組楊副組長紹經、第五組第二科黃科長于稹、第一科王秘書惠玲、第六組吳技士昌圖與台灣電子檢驗中心蕭課長育宜、陳組長信吉及謝佩青秘書共 7 位成員，拜會 NITE 辰已 敬理事長，說明本次拜會理事長外，將舉行「臺日強化產品安全領域第 1 次實務階層定期會議」，在致贈禮物後，並由我方歡迎理事長有機會來台灣參訪。理事長表示感謝我方對促成第一次會議及技術交流努力，並期許會議成功圓滿，雙方未來合作關係更加深化。

圖 14 拜會 NITE 辰巳敬理事長後合影

（吳昌圖技士（左 1）、王惠玲秘書（左 2）、黃于稹 科長（左 3）、楊紹經副組長（左 4）、NITE 辰巳敬理事長（右 3）、ETC 陳信吉組長（右 2）、ETC 蕭育宜課長（右 1））

2. 10:00 由日本台灣交流協會舟町仁志專務理事致詞，歡迎我方人員出席，期許未來能擴大雙方在政策面及技術面交流層面。

3. 10:05 台北駐日經濟文化代表處經濟組周立組長致詞

自 105 年 11 月 30 日經由第 41 屆臺日經貿會議簽署了「強化產品安全領域之交流與合作備忘錄（MOU）」，建立起臺日間制度性的合作架構，共同致力於提高兩國消費性產品的安全性，維護消費者權益。臺灣方面非常重視合作備忘錄（MOU）的簽署，希望在此合作備忘錄的架構下，推動臺日雙方在消費性生活產品之科學、技術的交流會議、重大事故案例與風險評估機制研析、即

時交換消費性商品召回資訊等議題之交流。

周組長表示在 106 年 6 月本局劉局長已先至日本與 METI 及 NITE 的長官進行了實務階層會議的討論，也促成了未來一年的具體合作事項，及今天臺日第一屆合作交流會議，討論的議題對臺日在消費品安全訊息的交流至關重要，藉由這次機會能了解雙方「產品安全管理系統的現況（Product of safety system）」，可以彼此分享「故事商品召回（Recall）」的處理經驗，以及相互提供目前令各國棘手的網路販售違規處理的作法，當然更重要的是彼此的技術交流。

這些實務工作的推展，除可增進雙方的瞭解外，可更進一步地在產品安全領域加強雙方的協力合作並達成共識；也經由雙方在市場監督及商品事故業務進行實務上的經驗分享，更能增加商品市場安全的管理及保護消費者權益，當然更可深化彼此未來的合作。

4. 10:10 日本經產省製品安全課和田恭課長致詞並介紹出席同仁，包含製品安全課中村光希總括係長、小町僚明課長輔佐、木村欣央國際擔當輔佐、製品事故對策室橋爪優文室長輔佐等 4 位。

5. 10:20 日本 NITE 製品安全技術中心新井勝己所長致詞及介紹出席同仁，包含製品安全企劃課吉津兼人課長、技術業務課古

田英雄課長、政川喬洸工程師、田崎茂工程師及製品安全技術中心山田幸子專門官等 6 位。

6. 10:30 由本局楊副組長紹經介紹我國出席代表，包含標準檢驗局第五組黃于稹科長、王惠玲秘書、第六組吳昌圖技士、台灣電子檢驗中心蕭育宜課長、陳信吉組長、謝佩青秘書等 7 位。

7. 定期會議中可討論下次政策面及技術面交流之商品，如網購之高風險商品等。

8. 技術交流頻率可以提高，若可透過雙方視訊會議就面臨困難提出建議，可有效即時解決困難。接著開始政策面會議的交流。

9. 日本經產省製品安全課和田課長簡報「Japan's Approach to Securing Product Safety」，說明日本商品事故現在趨勢、IoT 技術相關議題、網路購物商品安全、型塑產業安全文化、日本長者和兒童事故的趨勢等議題。會後經與和田課長瞭解，日方網路管理並不要求賣家在網路上揭示 PSE 標誌，而是透過網路購樣後檢測，每年購樣經費約 100 萬美元。

10. 和田課長建議未來臺日定期會議可以規劃一天議程，上午以政策面（屬經產省製品安全課業務範圍）為主題，下午以技術面（屬 NITE 業務範圍）為主題，107 年第 2 次定期會議可以參考辦理。

11. 有關召回信息部分，日本國內發生事故案件，主要以日文公布

在 METI 及 NITE 網站為主，包含 OEM 商品，建議兩國可定期交換召回信息。

12. 目前日本對重大事故會公開相關資料，也是我國未來努力的目標。

13. 由本局第五組黃科長簡報「台灣消費商品安全管理機制」，說明我國消費商品前市場及後市場管理(包含事故通報及網路管理)。報告中提及我國義務監視員制度係仿照日本制度，經詢問日本是否尚有義務監視員制度，日方回復並無義務監視員制度。

14. 日方提出我國目前對二次鋰電池之管理措施（檢驗標準、檢驗方式、後市場管理，市購檢驗結果)，對單獨販售鋰電池及電器中鋰電池之檢驗方式，以掃地機內含鋰電池為例說明。

15. 第一次會議議題較多，可作為後續深入探討的方向。

（六） 技術面會議紀要

1. 13:30 日方 NITE 田崎工程師簡報「Incidents related to solar power generation systems」，說明太陽光電系統事故發生原因及案例分享，經統計及分析，對燒毀電路機板之原因為銲錫不良，未來會加強這部分廠商製程改善及追蹤是否有效降低事故發生率。

圖 15 METI 和田恭課長致詞

2. 14:00 本局吳昌圖技士簡報「壁掛型液晶電視事故案例研究」，說明事故態樣、調查過程、模擬試驗安排與結果、心得與建議等議題，日方提出該類商品有類似情形發生，可提供相關案例分享給本局，將透過聯繫窗口處理後續事宜。日方處理類似本案程序面，會邀請廠商提供相關電路結構，過溫過載保護功能之元件，零件規格等資料作為後續分析資料。

日方詢問電線彎曲是否造成本次事故原因?本局回復依據目前事故樣品完全燒毀證據顯示，無法判定是否為電線彎曲所造成，但曾經有消費者使用吹風機後，電線未依使用說明書整

理，造成電線過度彎曲及材料疲勞，引發短路事故。

3. 14:30 本局吳昌圖技士簡報「鋰離子電池事故案例研究」，說明事故態樣、調查過程、心得與建議等議題，我方提出 X-RAY 掃瞄出照片在判讀技術上經驗有限，但在過充電及過放電時會造成電池膨脹情形。

日方詢問 USB 端子燒毀嚴重，是否有問題?我方回復經 X-RAY 掃瞄出 USB 端子附近電線無異狀。

日方詢問是否從事故樣品觀察外殼是否因外力衝擊下，找出燃燒原因?透過 X-RAY 找出是否電極短路？發熱點？並建議本局在事故樣品上從多面向著手，如外觀、零件規格、保護迴路等，做出綜合研判。

日方提供對鋰電池燃燒事故大部分是電池管理單元（Battery Management Unit，BMU）所造成，所以需要廠商提供相關資料如保護迴路元件及電路圖，配合分解樣品的結構，找出可能發熱點，增加研判分析資料，另有說明鋰電池若發生燃燒就會只剩殘骸，增加事故鑑定困難度。

4. 15:00 電子檢驗中心陳信吉組長簡報「太陽光電火災事故分析」，說明太陽能模組之可燃性、太陽光電火災事故案例與統計及結論等議題，日方提供在目前日本設置太陽光電系統時，皆由系統商執行安裝，曾因系統商對安裝人員訓練不足，造成

事故發生，因為日本在交流電之電力設備已由電機技師安裝技術成熟，另對直流電之電力設備安裝人員經驗不足，所以日本有補強安裝人員之教育訓練。

5. 15:30 結束會議，重點如下:

（1）日方建議有關技術性議題採行網路視訊會議模式，或用電子郵件方式聯絡，有關 METI 窗口為中村光希先生，NITE 窗口為山田幸子小姐，我方窗口會於返台後回復日方，以增加雙方連絡強度。

（2）我方提出事故通報資訊公布與資訊公開之作業程序（政策面），建議請日方 METI 能提供經驗交流，另對於 X-RAY 之鑑定技術，也請日方 NITE 協助技術訓練。日方 NITE 新井先生回復目前對事故案件報告公布是經歷過一個漫長的過程，透過 METI 與企業的合作與溝通才有現在成果，另美國 CPSC 目前僅有對召回商品才公開。建議我國可先做事故發生態樣公布，以循序漸進方式來達成。日方再次強調以「安全」為前提下，保護國民安全並形成全國共識，較容易推動。

6. 日方 METI 木村先生再補充，重大事故調查報告公開目的是不讓類似案件再發生，日本前幾年未公開調查報告時，是因為法律未有相關公開調查報告規定，加上個人資訊保護法的規定使得推動困難，但當如燃氣熱水器連續發生一氧化碳中毒，或家

庭用碎紙機造成兒童受傷事故時，造成社會輿論導向政府不作為的聲音，日本政府就修改法律對事故做強制公開義務規範，有關政策面的演進及規劃，可在 107 年定期會議中進一步討論。

7. 建議日本推動「長期使用產品安全檢修與標示制度」可於下次定期會議中進一步討論。

圖 16 NITE 簡報太陽光電事故案例

圖 17 ETC 簡報太陽光電

圖 18 技術交流會議（1）

圖 19 技術交流會議（2）

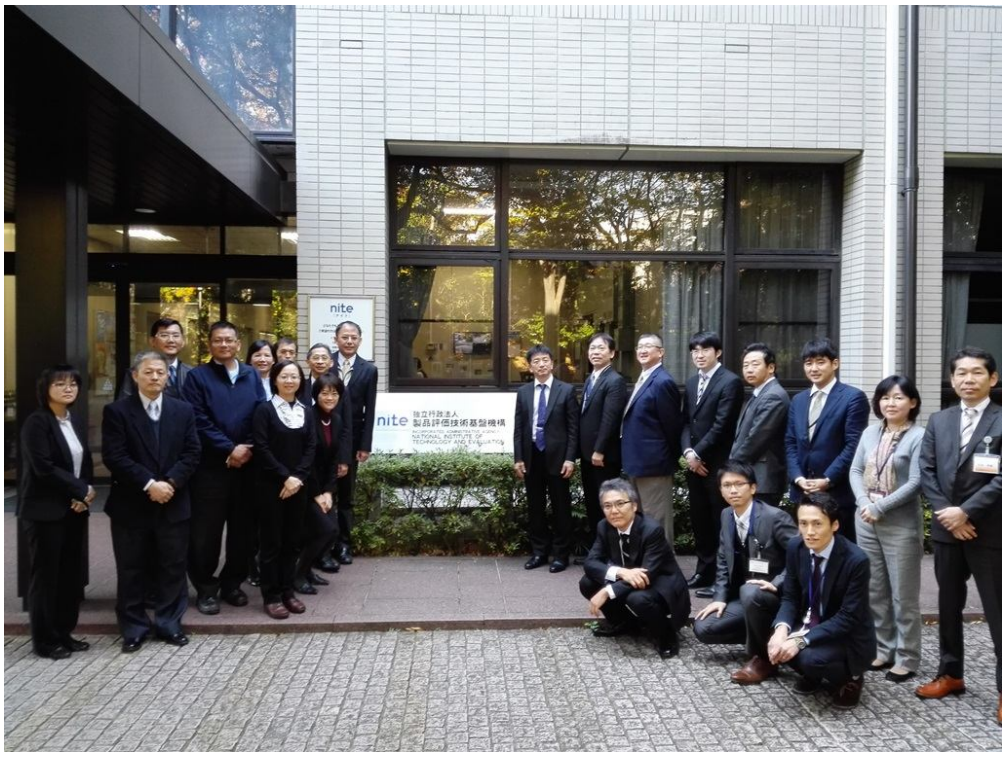


圖 20 NITE 與駐日經濟文化辦事處、本局及 ETC 人員會議後合影

伍、 心得及建議

一、臺灣與日本同屬多颱風與地震之國家，ClassNK 已累積不少離岸風場專案驗證經驗，亦對於抗颱耐震驗證技術具有專業技術能量，將有益於提升國內建立離岸風場之安全性，促進臺日兩國在綠色能源的合作。本局規劃建立第三方檢測驗證中心，以期能建立離岸風力發電自主驗證能量並與國際制度接軌，確保離岸風場設置之安全性、穩定性及降低設置成本。

二、NEDO 在新能源技術研發方面投入許多經費及工作計畫，其中涉及日本標準、檢測與驗證等工作範圍，建議可在適當時機舉辦臺日能源科技產品標準檢測驗證研討會，讓我國廠商了解日本推動措施及相關法規，以利我國業者將商品外銷日本，或導入適合我國環境之標準技術。

三、富士電機吹上工場位於埼玉縣鴻巢市，主要生產電磁開關、斷路器商品，以及建置開發評估部門（產品開發、生產技術、品質保證）。參訪過程除參觀電磁開關及斷路器生產線，也參觀產品開發階段之特性、環境、材料及斷路器試驗室，由於涉及富士電機關鍵技術，因此無法同意拍照。該廠之電磁開關已導入全自動化生產，甚至已試行開發機器人來擔任部分工作，以取代人力，可作為我國傳統製造業的借鏡。

四、JECTEC 為日本具有電線電纜專業檢測技術實驗室，也是日本參與

IEC 國際電線電纜標準之技術專家，與我國台灣電子檢驗中心對電線電纜檢測技術交流，自 2015 年起雙方保持友善及合作關係，建議可規劃在適當時機由台灣電子檢驗中心與JECTEC 簽署合作備忘錄（MOU），以利後續雙方進行實質技術交流與認驗證業務推動。

五、為確保消費者權益，日本制定「家庭用品品質表示法」（Household Goods Quality Labeling Law）規定一般家庭用品標示之遵守原則，其主管機關為消費者廳（CAA），消費者廳人員說明其四大分類商品（紡織品、塑膠用品、家用電氣用品及其他雜項消費品）之相關標示規定，日本現行標示規定原則上不會造成法規重複規定及增加廠商標示成本，其主要依據為日本工業標準（JIS）之標示要求，另依產品類別及特性增列必要項目（Additional items）。我方代表說明目前面臨商品標示基準與國家標準相關標示之競合之問題，日方表示 8 年前亦面臨類似問題，自 2009 年設立消費者廳（CAA），多次召開內部檢討會並各於項草案擬訂時聽取各方意見（METI、業界、專家等）彙整後由其調和、修法，解決法規競合的問題。由於國內商品標示法其主管機關為經濟部商業司，又國家標準為本局所制定，可能造成商品標示要求競合問題，倘組織再造完成，商品標示法移轉至本局管理，將可解決以上問題。

六、在 NITE 目前商品事故鑑定作法及定期會議方面

（一） 東京實驗室設計有事故案例展示空間，除展現事故鑑定的專業

能力外，也可提醒廠商或民眾在商品製造或使用上所需注意的細節，避免事故再度發生，本局亦有一些成功的事故鑑定案例如除濕機自燃事故等，可參考 NITE 的作法，在實驗室的公共空間建置商品事故展示區，除展現本局同仁的專業能力外，亦可方便對外宣傳商品安全知識。

（二） 日本對於商品事故通報資訊之蒐集、調查、研究、公布等已建立完整系統，無論在商品事故鑑定技術或事故資料庫建立都已有相當好的基礎，值得本局借鏡學習，本局雖已有完整之商品驗證系統及後市場管理制度，惟對於商品事故鑑定技術及資料庫之建立仍待努力，因此，可以借鏡 NITE 作為本局標竿學習的對象，並儘速建立商品事故資料庫。

（三） 鑑於商品事故鑑定是非常專門的學問，技術人員養成不易，還原事故發生需具備完善之設備與實驗室，鑑定結果之正確性更有賴完善之資料庫及長期經驗累積，NITE 起步甚早，專門技術分工細膩，技職人員事故調查經驗豐富，建議本局與 NITE 保持密切合作關係，定期派員赴日研習或邀請日方派遣專家指導，以加速本局商品事故鑑定能力提升。

（四） 107 年「臺日強化產品安全領域第 2 次實務階層定期會議」在我國舉辦，建議在局內需先召開籌備會議及準備議程資料，除追蹤第 1 次會議結論進度外，可研擬第 2 次會議主題，目前尚待本局推派指定負責單位及聯絡人，以利進行後續事宜。

附件 1 NEDO 在 2017 年推動再生能源重要工作

附件 2 富士電機簡介

附件 3 JECTEC 簡介及簡報

附件 4 家庭用品品質表示法手冊

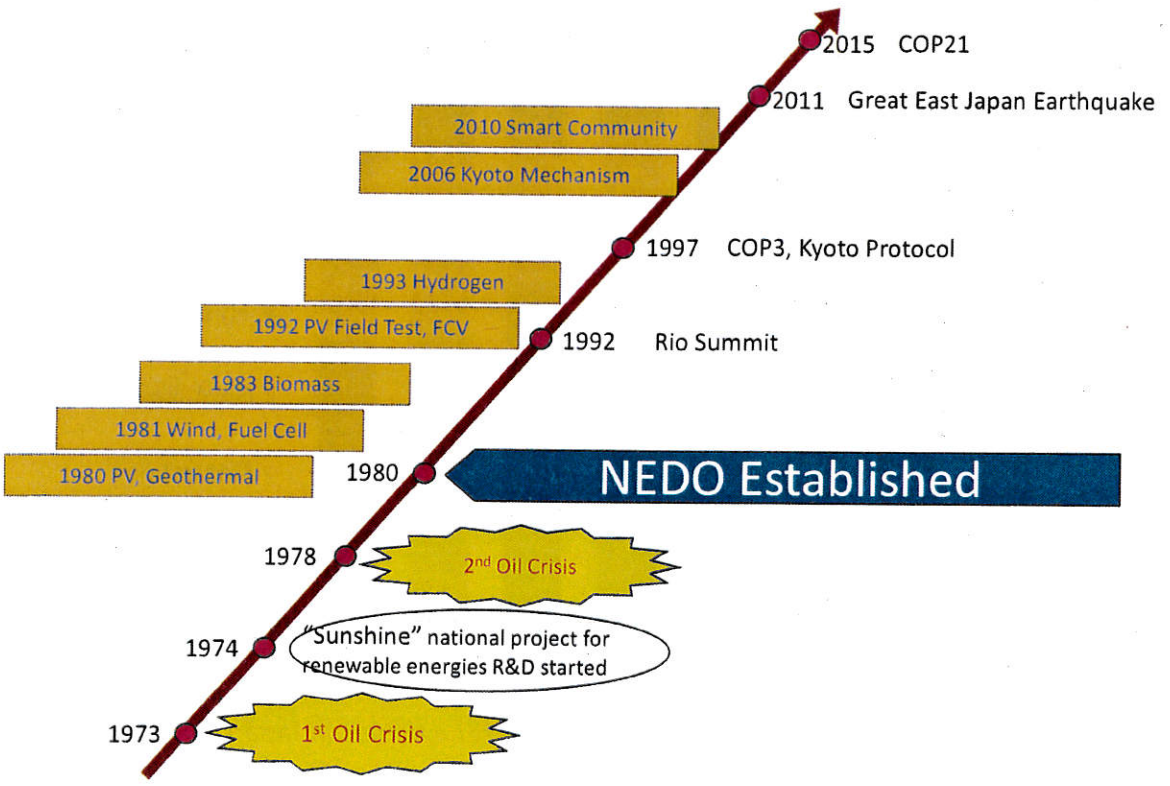
附件 5「臺日強化產品安全領域第 1 次實務階層定期會議」簡報

Renewable Energy in Japan and the NEDO activities

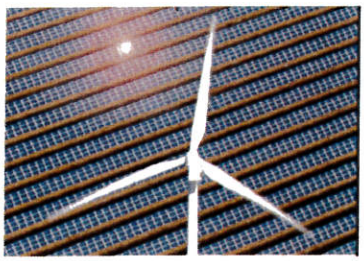
2017

Hiroyuki Kondo
Director General
New Energy Technology Department.
New Energy and Industrial Technology Development Organization (NEDO), Japan

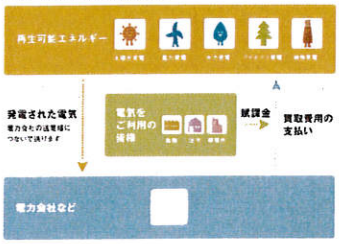
History of NEDO's New Energy Technology R&D



Current situation on renewable energy in Japan and the world



再エネ・水素等関係閣僚会議での安倍首相
（4月11日於首相官邸）



◎Expected further deployment of RE

RE deployment is expanding globally. IEA expects the share of world electricity generation would increase from 22 % in 2013 to around 33 % in 2040.

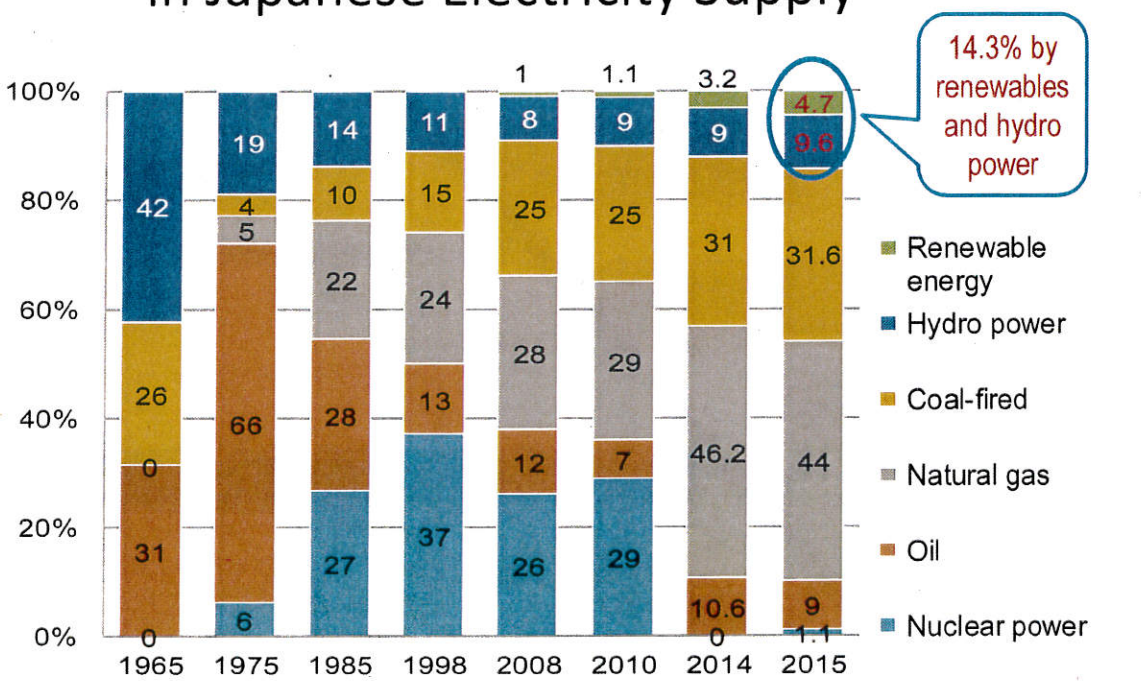
◎Hydrogen society

Prime minister Abe mentioned "Hydrogen society" in his speech, January 2017. After that, he said "We would realize Hydrogen society as a pioneer in the world" and he expressed his intention to set up the basic plan within this year for that.

◎Revisions of FIT from 2017

To reduce the burden on the citizens which is getting increase every year, the tariff was revised except for PV and auction was introduced for 2MW or more for PV.

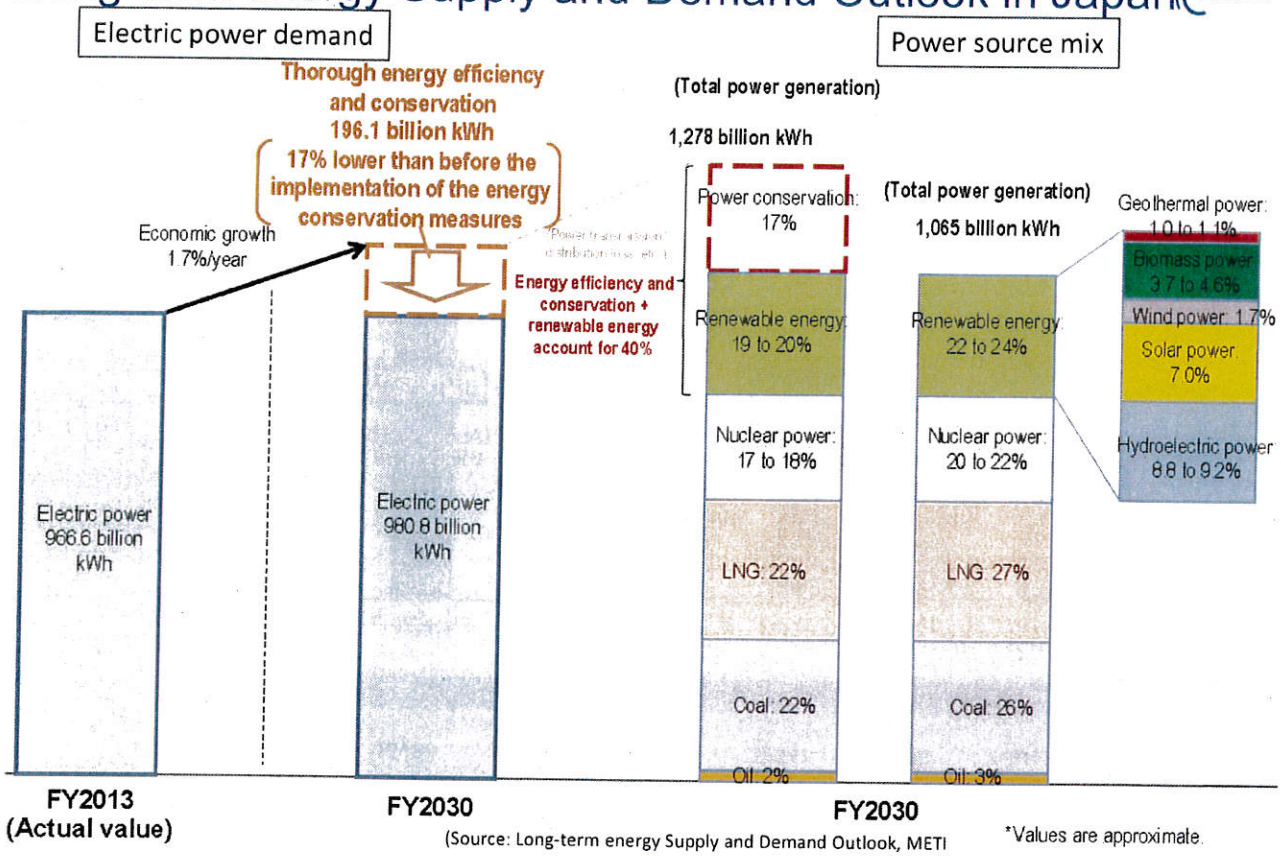
Share of Renewable Energy in Japanese Electricity Supply



Breakdown of the power source structure and renewables in Japan

Source: Created by NEDO from the material document of the "Agency for Natural Resources and Energy" and "The Federation of Electric Power Companies of Japan"

Long-term energy Supply and Demand Outlook in Japan



(Source: Long-term energy Supply and Demand Outlook, METI *Values are approximate.

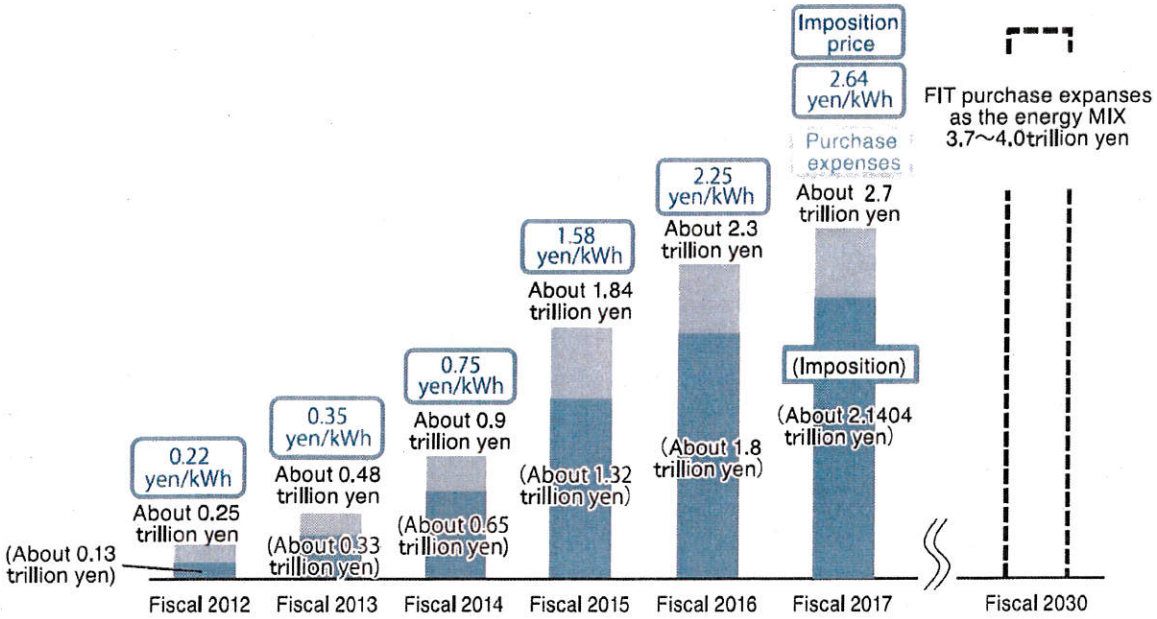
Expansion of RE after FIT

(Unit: MW)

	Before the introduction of the FIT scheme	After the introduction of the FIT scheme	FIT-certified installed capacity	Energy Mix
	Up to July 2012	Up to December 2016		2030
Solar P.V.	5,600	37,610 (+32,010)	80,832	64,000
Wind power	2,600	3,242 (+642)	3,078	10,000
Middle- and small hydro	9,600	9,829 (+229)	795	10,800–11,600
Biomass	2,300	3,068 (+768)	3,987	6,000–7,300
Geothermal	500	510 (+10)	79	1,400–1,600
Total	20,600	54,259 (+33,659)	88,773	

cumulative basis. () is increments. (Source: Created by NEDO from the material document of the Agency for Natural Resources and Energy

Challenge (1) Still High Cost of RE and Increasing Consumer Payments



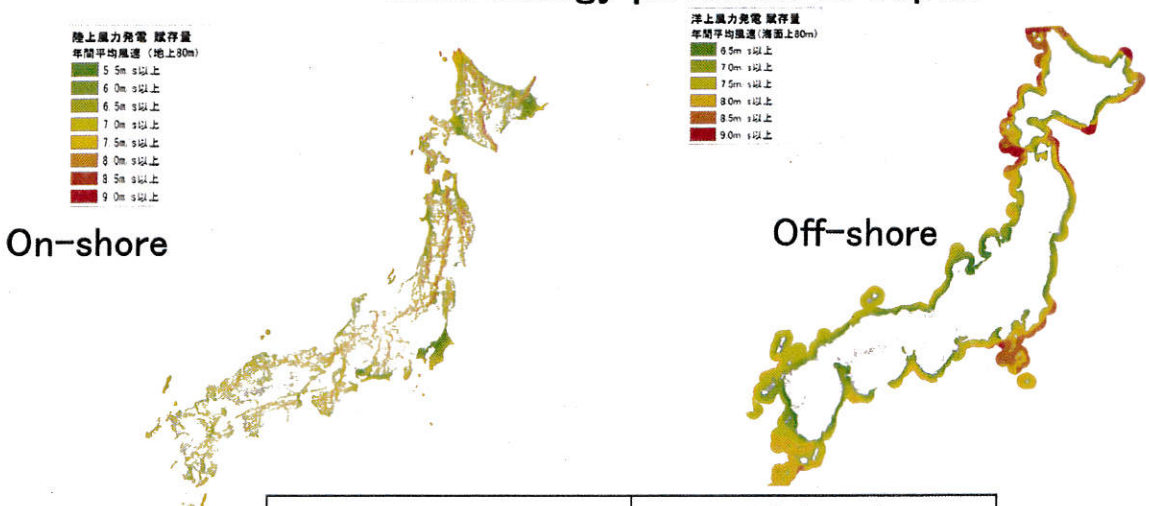
年度	2012	2013	2014	2015	2016	2017
標準家庭月額 (260kWh/月)	57円	91円	195円	411円	585円	686円

Imposition after an introduction of the feed-in tariff (FIT)

Source ：Documents by Procurement Price Calculation Committee, METI

Challenge (2) Location Constraint(Wind)

Wind energy potential in Japan



	Wind speed
onshore	6.0m/s～ 7.0m/s～ 8.0m/s～
offshore	7.0m/s～ 8.0m/s～

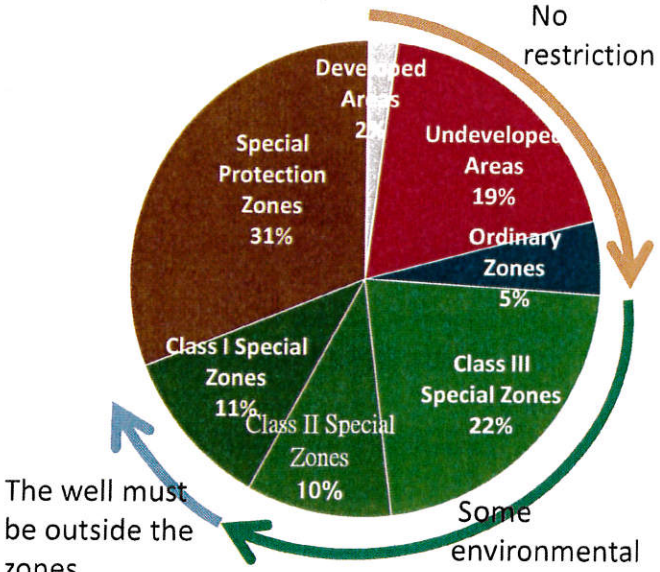
出典：資源エネルギー庁「新エネルギー等導入促進基盤調査事業（平成23年2月28日）」

Challenge (2) Location Constraint(Gheothermal)

Geothermal energy potential

Country	Active Volcanoes	Identified Resources (MW)	Installed Capacity (MW)
USA	160	30,000	3,093
Indonesia	146	27,790	1,197
Japan	119	23,470	536
Philippines	47	6,000	1,904
México	39	6,000	958
Iceland	33	5,800	575
New Zealand	20	3,650	628
Italy	13	3,270	843

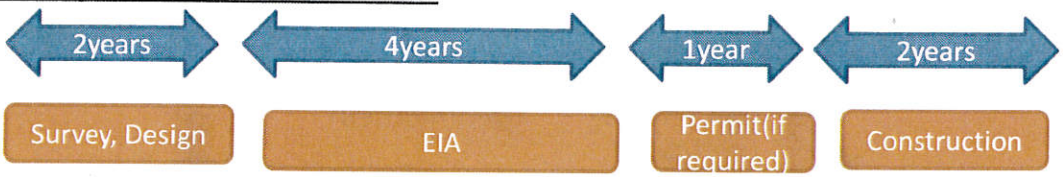
Resources Distribution of Japan



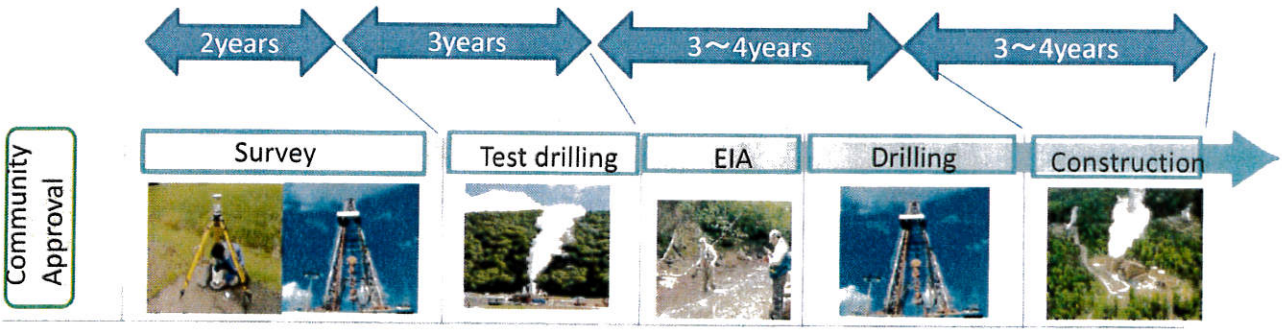
Source : Ministry of Economy, Trade and Industry

Challenge (3) Environmental impact Assessment and its impact to business development

General process for wind farm

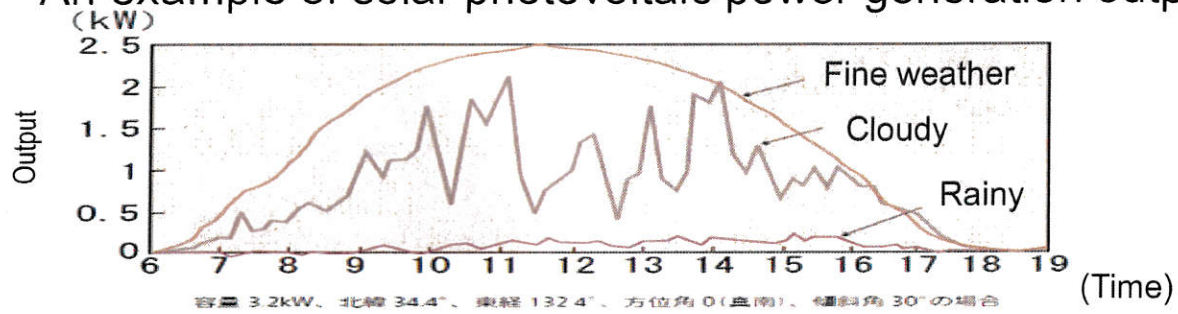


General process for geothermal power plant

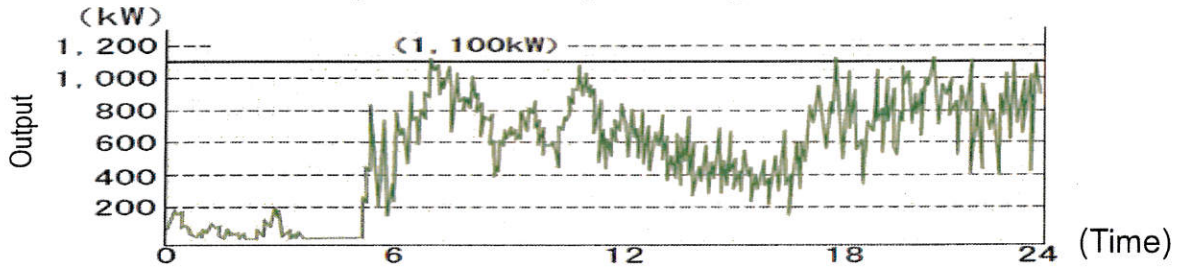


Challenge (4) Emerging Grid Connection Constraints

An example of solar photovoltaic power generation output



An example of wind power generation output

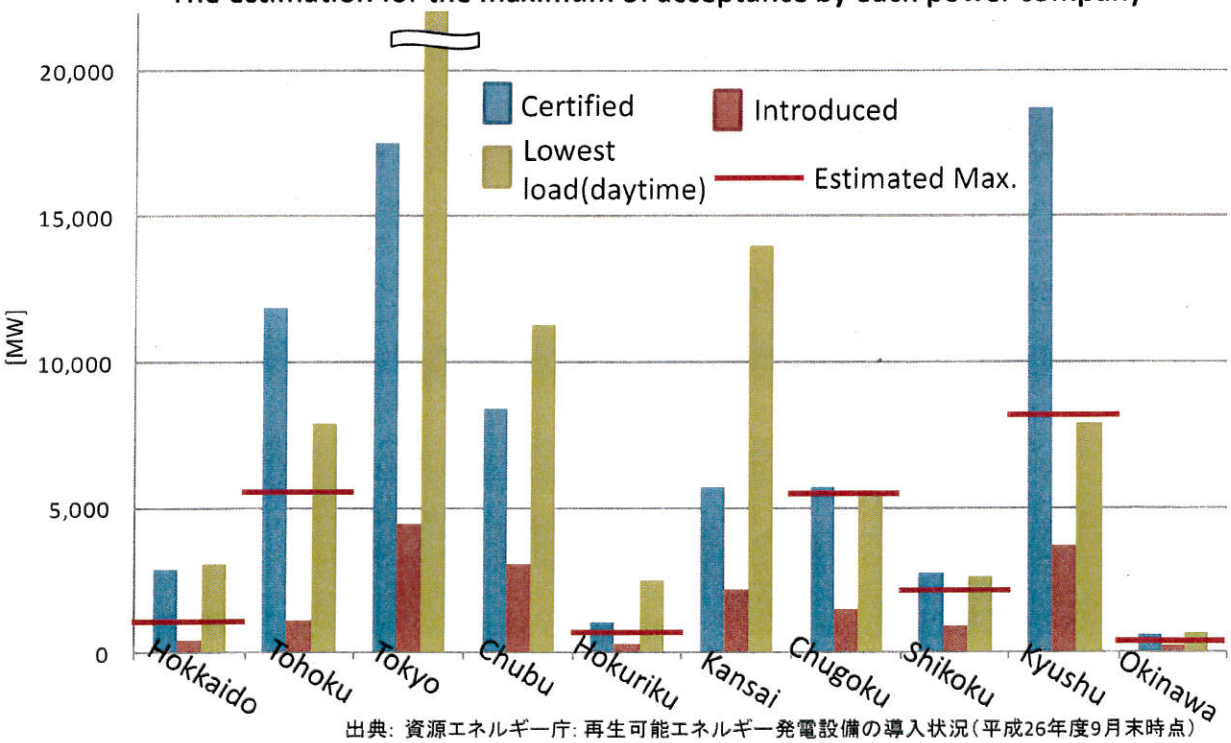


Source: "Nuclear power/energy drawings", the Federation of Electric Power Companies of Japan, web page of Tokyo Electric Power Company

Challenge (4) Emerging Grid Connection Constraints

After FIT introduced, the grid capacity for the variable power sources is now constraints.

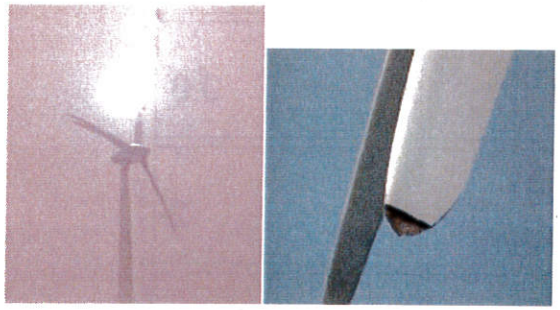
The estimation for the maximum of acceptance by each power company



出典: 資源エネルギー庁: 再生可能エネルギー発電設備の導入状況(平成26年度9月末時点)

Challenge (5) To ensure the safety of new energy generation equipment

Wind turbines and PV panels face natural disasters.



Wind turbines damaged by lightning

PV panels damaged by the typhoon

Basic Principles of NEDO's Technological Development Activities for New Energy

(1) For the purpose of achieving the introduction target of new energy, overcome the technical challenges associated with a large-scale introduction of new energy, including the cost reduction of solar cells and wind power etc.

(2) Seek to cover the needs from the community and conduct the necessary projects for security and safety first.

(3) Conduct unprecedented innovative technology development in parallel with the efforts for differentiation, high-value addition and a wider use of related technologies, and promote innovations in the area of new energy.

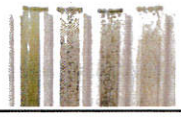
(4) Regarding the technologies at the commercialization stage, adapt new technologies to our society by means of not only technological development but also a wide variety of efforts for the dissemination of results, including the standardization, optimization of regulations especially for the hydrogen technology.

(5) Establish strategic and collaborative relationships with foreign organizations concerned, and support Japanese companies by utilizing a variety of tools such as demonstration research, joint R&D, and information exchange etc. with a view of proactively supporting the region/overseas deployment of Japanese new-energy-related technologies.

Budget for renewable energy (FY2017)

Total: 31.79 billion yen # of Projects : 19

(Billion Yen)

	PV	5.4
	Wind	6.92
	Ocean	0.6
	Geothermal/ Renewable heat	2
	Biomass	3.97
	Fuel cell/ Hydrogen	12.9

PROJECTS

(Solar PV, Wind, Biomass, Geothermal, Heat utilization, Hydrogen)

"Development of high performance and reliable PV modules to reduce levelized cost of energy"

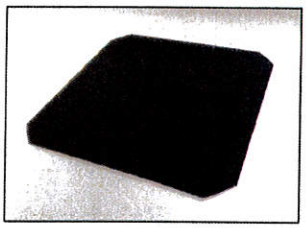
Period: 2015～2019

Target

○Reduction of levelized cost of energy (LCOE)

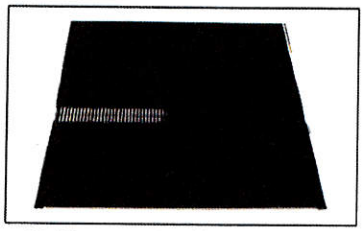
○Development of low cost process of combined-type c-Si solar cells such as combination of hetero-junction and back contact technology (①).
○Development of high efficiency CIS thin film solar cells (②).
○Realization of module efficiency of over 30% and system cost of 125JPY/W for Ⅲ-Ⅴ compound solar cells (③) and 20% of module efficiency and 15JPY/W of module production cost for perovskite solar cells.
○Basic technologies like "evaluation technique of solar cells and modules", "amount of power generation evaluation" and "resolution of degradation mechanism."

①crystal Si solar cells



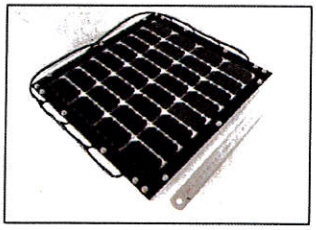
26.3% was also attained for Developed for back contact + hetero junction integration cell (180 cm^2)

②CIS thin film solar cells



19.2% was attained for CIS sub module (900cm^2)

③Ⅲ-Ⅴ compound solar cells



31.17% was attained for 3 junction solar cell (968cm2, 32 cells) Realization of light weight and flexible module.

"Development of Solar power generation system efficiency improvement and maintenance technology"

Period: 2014～2018

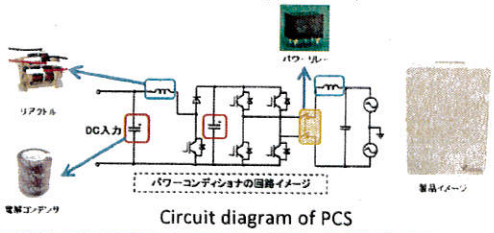
Target

○ Development of technologies to reduce "balance of system" costs (power generation costs related to aspects other than those related to solar cells) by improving the efficiency of systems and reducing system-related costs and to develop maintenance and management technologies to secure a sufficient amount of power generation for the long term.

Contents

① For the purpose of ensuring appropriate maintenance and management of a solar power generation system and reducing costs after the start of its operation, technology development is underway to prolong the lifespan of electrolytic capacitors, power relays, and reactors in order to extend the designed lifespan of residential power conditioners to 30 years (twice the current lifespan of existing residential power conditioners).
② Carry out the survey, research and demonstration for the issue of structural safety and electric safety for solar power generation system, and acquire durability data.

① Solar power generation system maintenance technology Development



Circuit diagram of PCS

②Verification project for securing the safety of solar power generation system

Pile support force measurement ／ Wind resistance test

"Development project for Photovoltaic (PV) recycling technology"

Period: 2014～2018

Aim of the project

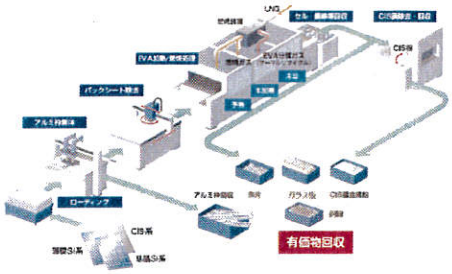
Contribute to building a social system related to recycling by

- ✓ Demonstrate technology to realize proper disposal of used solar power generation system in addition to low cost recycling processing technology
- ✓ Develop technology for reusing used PV modules

Overview

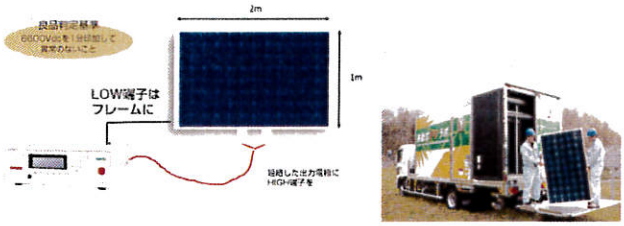
1. Aiming at Commercialization of disassemble technology for recycling, build and demonstrate a prototype plant capable of the processing cost at 5 Yen/W or less (at 200MW annual processing amount).
2. Develop technology to inspect used PV modules on site in shorter time with higher accuracy.

1. Low cost disassembling technology



Recycle processing plant for PV module

2. Low cost inspection technology on site



Development of inspection technology for mobile PV laboratory

Research and Development of Offshore Wind power Generation Technology

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Feasibility study	FS									
Demonstration		Demonstration Research of Offshore Wind Measurement System								Guide-book for offshore wind
			Demonstration Research of Offshore Wind Power Generation System							
							①Advanced Floating Offshore Wind Power Generation			
Research and development				Research and Development of Large-scale Wind Turbine						
Installation support						Development Support for Bottom-fixed Offshore wind farm				
Peripheral technology						Floating LIDAR in Nearshore				
								Offshore Wind Map		
Highly Practical Use						② Smart Maintenance				

①Demonstration Research on Next-Generation Floating Offshore Wind Power Generation System (FY2014～FY2017)

NEDO

Overviews

○Demonstration Research on Next-Generation Floating Offshore Wind Power Generation System (Barge Type)

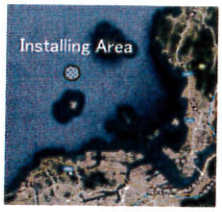
- To demonstrate a low-cost floating offshore wind turbine system at depth from 50m to 100m.
- Feasibility study in FY2014, design, procurement and installing in FY2015 – FY2017.

○Next Generation Floating Offshore Wind Turbine Technologies Demonstration Research (Element Technologies Development)

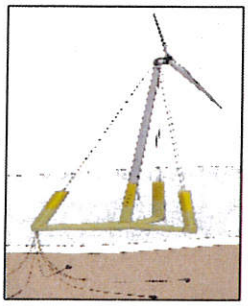
- To decrease the LCOE of FOWT to the level of 20 JPY/kWh, 2030 in Japan.
- To develop such a low-cost FOWT system with installing relatively shallow water depth.
- Element technologies study in FY2016, scale model testing in tank and sea in FY2017.

Barge Type
(Demonstration)

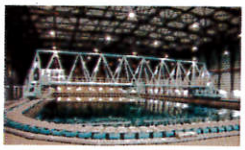
Turbine: 2 blades upwind
Rated Power: 3MW
Rotor diameter: 100m
Height: 72m
Floater: Barge type (Steel)
51m × 51m × 10m



Element Technologies Development
(Simulation & Scale model testing)



- Turret mooring system:
  No wind turbine yaw system
- Mass-reduced system:
  Integrated design of turbine, tower and floater



Tank testing
@NMRI

②Research and Development Project of Prevented Maintenance Technology for wind turbine: "SMART MAINTENANCE FOR WIND TURBINE" (2013～2017FY)

○INTRODUCTION

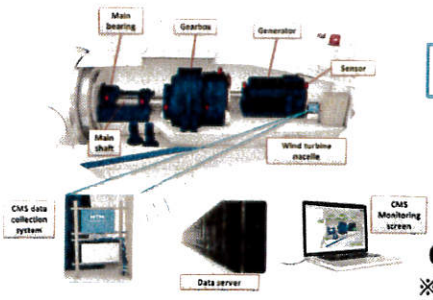
NEDO is developing **new preventive and effective maintenance technologies that utilize IT & AI** in order to avoid lowering of availability factor caused by trouble.
They are **"SMART MAINTENANCE TECHNOLOGY".**

○GOALS

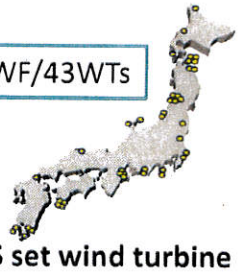
- O&M Paradigm Shift :"Reactive Maintenance" to "Preventive/Predictive Maintenance"
- Discovery rate of 90% over for components abnormality causing trouble before one to three months.(on sensing components)

○WIND FARM OPERATORS HAVE ALREADY INSTALLED GRASP TOOLS

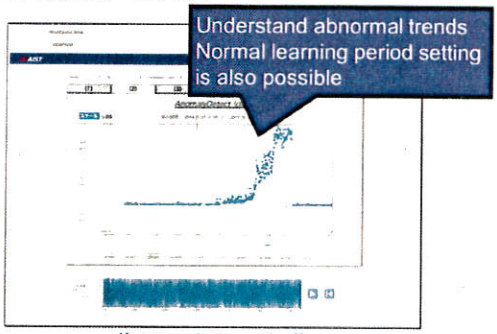
- Discovery rate of trouble is 100%. Apply the latest AI method
- Advanced CMS Anomaly Detection Web System "Wind Castle" OPEN



27WF/43WTs



CMS set wind turbine
※ CMS: Condition Monitoring Systems



"Wind Castle"

Demonstration and Development Project of Production System for Cellulosic Bioethanol

FY2014～FY2019

Objectives

・R&D of an alternative fuel to Gasoline for reducing Green House Gas(GHG) in transport.
・Development of domestic technology of Cellulosic Bioethanol.
・Realization of commercial production of cellulosic ethanol not competing with food.

Outline

①Determining best combinations of elemental process technologies, and feasibility study

○Study of integrated production process using woody biomass

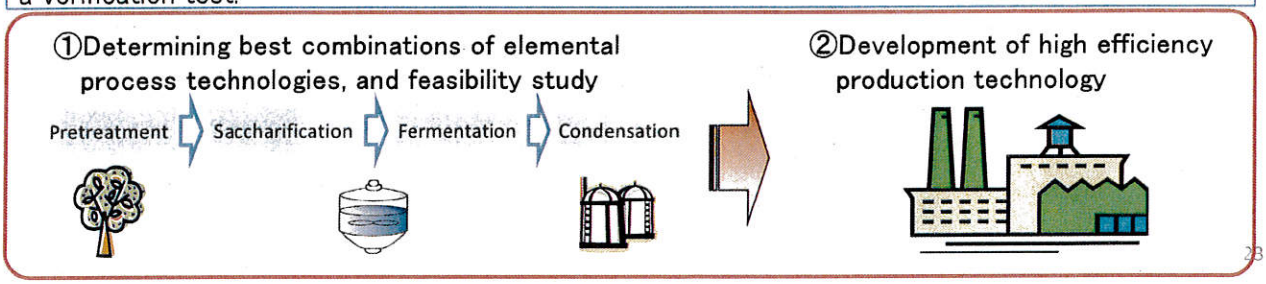
Unifying the result of Development of an Innovative and Comprehensive Production System for Cellulosic Bioethanol(FY2009～FY2013), improve efficiency and reduce costs of commercial production.

○Study of integrated production process using domestic and foreign cellulosic waste

Utilizing existing waste collection systems and the result of Development of Efficient Element Technology for Biofuel Production, reduce costs and explore the possibility of commercial production.

②Development of high efficiency production technology

By the result of feasibility studies, determine necessity of further verification. If necessary, conduct a verification test.



Development of Production Technologies for Biojetfuels

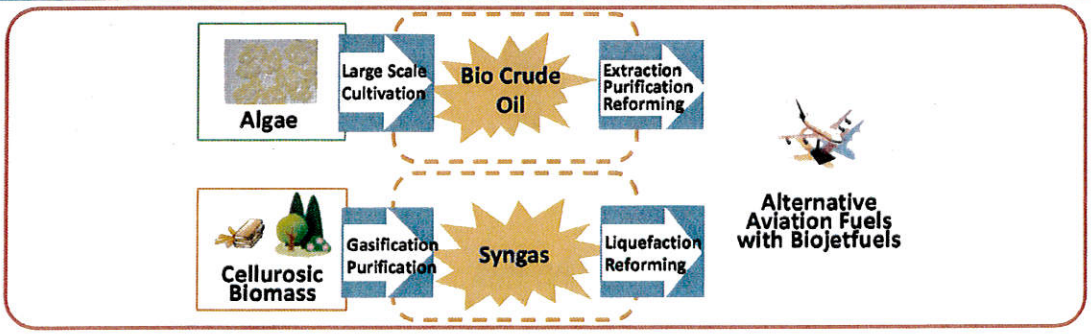
FY2017-FY2020

Objectives

○Aiming at commercialization around 2030, we are developing stable consistent production technologies from feedstocks to biojetfuels in accordance with ASTM D7566 and cost reduction technologies to establish our own basic production system indispensable for stable biojetfuels supply.
○By commercialization of biojetfuel production system around 2030, we would contribute to reduce CO2 emission derived from jetfuel usage.

Outline

○Establishment of consistent operation systems with pilot-scale facilities to produce 20 L/day biofules in accordance with ASTM over 300 days/year.
○Calculation of presumed production cost around 2030 based on these results and indication of pathway to realize 120¥/L predicted by EIA.
○Preparation of Japanese sustainability assessment criteria of biojetfuels and organizing issues of market formation and supply chain management concerning commercial flight using biojetfuels.



Demonstration project of biomass energy for regional sustainable integrating business model

FY2014~FY2020

【Purpose of the project】

○ NEDO will investigate efforts case of domestic and international biomass business, and formulate guidelines to facilitate sustainable use to biomass energy in each region.
○ Based on the guidelines, we will support businesses aiming to utilize biomass energy in the regions.

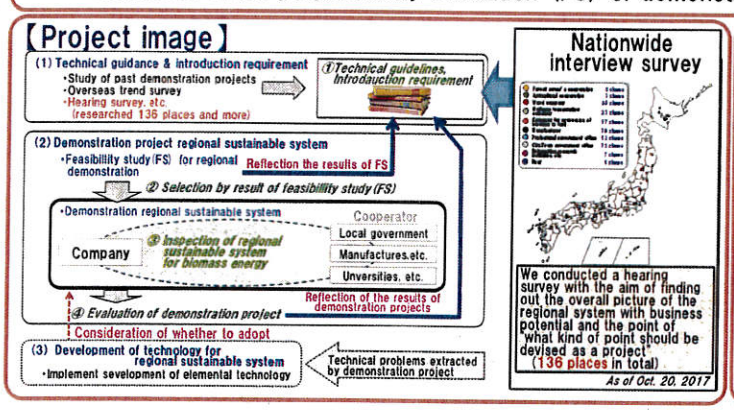
【Contents of project】

(1) Technical guidance & Introduction requirement
- Discover success stories and failed cases in Japan and overseas and formulate guidelines consisting of technical guidelines and introduction requirements for each of the four biomass types (wooden, wet, urban, mixed).

(2) Demonstration regional sustainable system
- We will support feasible study (FS) and demonstration project (2/3 subsidy) to businesses that newly introduce biomass energy according to the guidelines formulated.

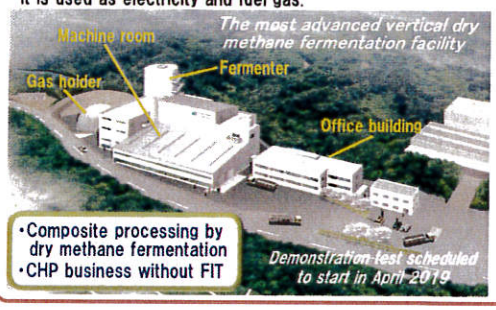
(3) Development of technology for regional sustainable system
- We will develop technology to promote regional biomass use. (When technical development tasks are extracted in the projectability evaluation (FS) or demonstration project)

【Project image】



【Example of demonstration project】

Biogas is produced using waste such as household waste, sewage sludge and livestock manure as a raw material, and it is used as electricity and fuel gas.



Research and Development of Geothermal Generation Technologies

Period : 2013fy~2017fy

Objectives

1) For 2030: To develop technologies for achievement of government's goal which increases capacity of the geothermal power plant to 1.55 GW by 2030 (Long-term Energy Supply and Demand Outlook: July, 2015).
2) For 2050: To indicate R&D of "Supercritical Geothermal Power Generation" which is described by the National Energy and Environment Strategy for Technological Innovation towards 2050 (NESTI2050: April,2016).

Contents of project

1) For 2030: Following R&D started from 2013.
(1) Development of small and efficient power generation facilities
(2) Development of binary power generation systems for hot spring
(3) Development of technology for mitigation of environmental impact etc
2) For 2050: The technology roadmap of NESTI 2050 provides 5 phases, ①Feasibility Study(FS)⇒②Preparation for Drilling exploratory well⇒③Drilling exploratory well ⇒④Preparation for demonstration⇒⑤Demonstration. We started the FS from June, 2017.

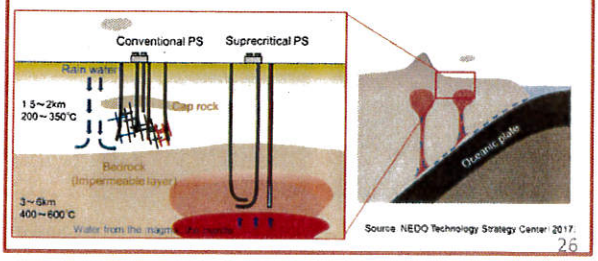
Result In the environmental assessment of geothermal power plants, prediction of the hydrogen sulfide diffusion emitted from cooling tower has been needed. In previous assessments, it takes about 6 months by a scale model. We developed a numerical model which is applicable for the environmental assessment, which leads to reduce the time by half.

Source: Central Research Institute of Electric Power Industry (CRIEPI)

Calculation results of hydrogen sulfide diffusion prediction

Comparison of conventional and Supercritical geothermal systems

	Depth	Temperature
Conventional	1~3km	200-300℃
Supercritical	4~5km	400-500℃



Source: NEDO Technology Strategy Center 2017.

R&D project on Renewable Energy Heat Direct Utilization Technology

Period: 2014fy ~ 2018fy

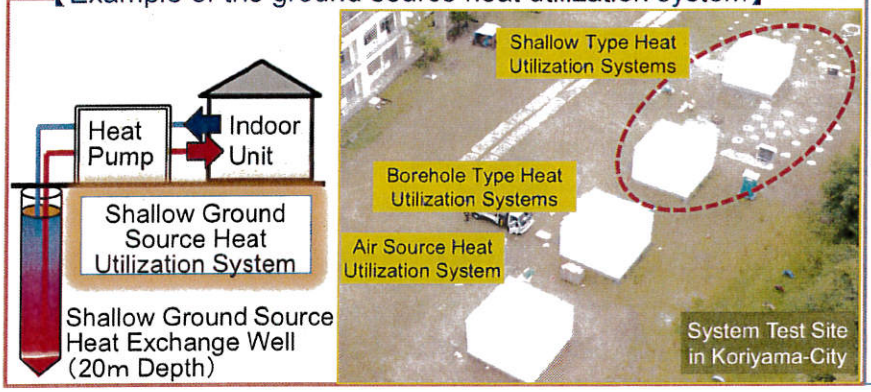
[Objectives]

- 20% reduction of initial cost and running cost of ground source heat utilization systems.
- 10% reduction of initial cost of solar heat, snow ice heat, hot spring heat, and biomass heat utilization systems.

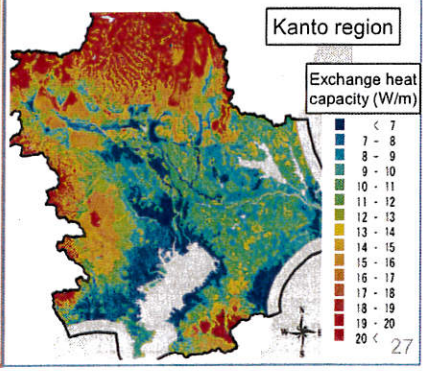
[Contents of project]

1) Elemental technology development of high-speed and automatic-operated boring machines, boring methods, or high efficient underground heat exchangers.
2) Development of high efficient ground source heat utilization systems with high heat exchange performance and improved energy-saving operation performance
3) Development of evaluation and mapping technology for ground source heat potential to assist for optimum design of the heat utilization systems.
4) Development of high efficient heat utilization systems for solar heat, snow ice heat, hot spring heat, and biomass heat depending on local heat source potential.

【Example of the ground source heat utilization system】



【Example of the potential map】



27

Development of Advanced PEFC (Polymer Electrolyte Fuel Cell) Utilization Technologies Project period: Fy2015-Fy2019

Objective

Aiming for the expansion of fuel cells by presenting design guidelines that can realize highly efficient, highly durable, low cost fuel cells and promoting the development of FCVs by the private sector.

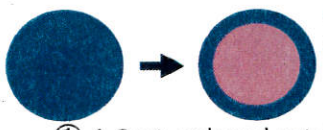
Contents

①Development of Fundamental Technologies for PEFC Promotion

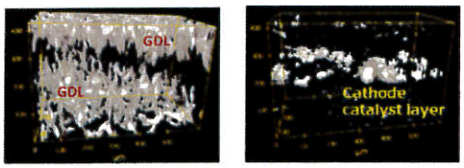
Work within an all-Japan framework to develop technology to analyze the internal structure and Reaction mechanism of fuel cells, to create design guidelines (concepts) to allow the application of new materials to fuel cells to achieve higher performance.

②Development of Technologies for Commercial Production of PEFCs

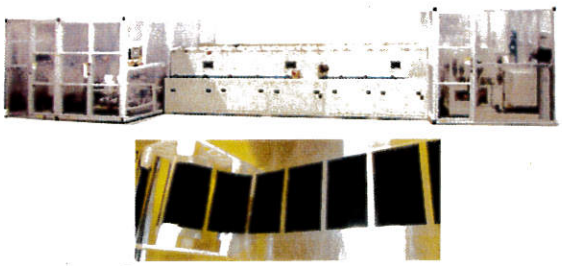
Work to develop new process technology of fuel cell manufacturing to significantly reduce the takt time.



①-1 Cost-reduced catalyst



①-2 Visualization of catalyst aggregation in MEA



②Production technology of fuel cell

28

Development of Technologies to Promote Practical Application of SOFC (Solid Oxide Fuel Cell) Project period: Fy2013-Fy2017

Objective

For dissemination of solid oxide fuel cell, which shows high power generation efficiency and is applicable for various fuel such as natural gas and coal gas, R&D for fundamental technology and demonstration of industrial fuel cells systems is conducted.

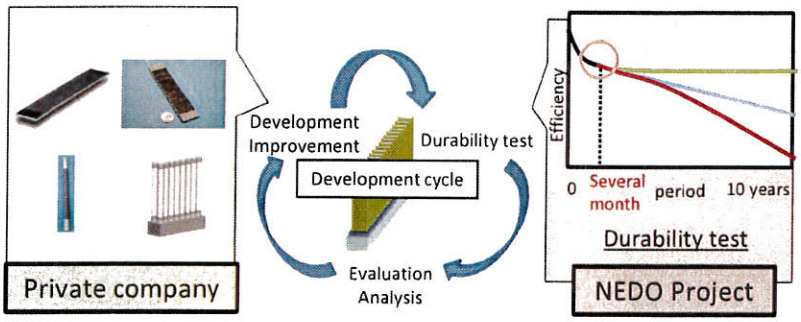
Contents

①Development of Technologies to Promote Practical Application of SOFCs

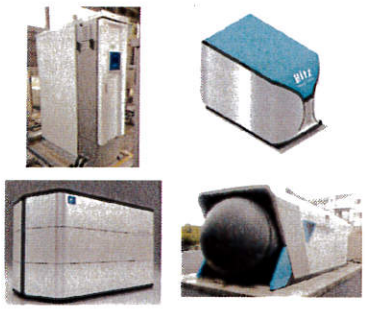
To develop fundamental technology to evaluate 90 thousand hours (10 years) durability and to unravel the mechanism of deterioration for promoting the low cost material and FC R&D in industry.

②Demonstration and Study of Technologies for Practical Utilization of SOFC Systems

To verify the durability and reliability of SOFC system under the real environment demonstration test for practical industrial use.



①Rapid durability evaluation method



②SOFC for demonstration

Advancement of Hydrogen Technologies and Utilization Project

Project period: Fy2013-Fy2017

Objective

For the dissemination of fuel cell vehicle and hydrogen refueling station (HRS), this project is developing technologies for lower costs and safety of HRSs, and collect data for reviewing regulations.

Contents

①Research on National Regulations and International Standardization for Use of Hydrogen Infrastructure and FCVs

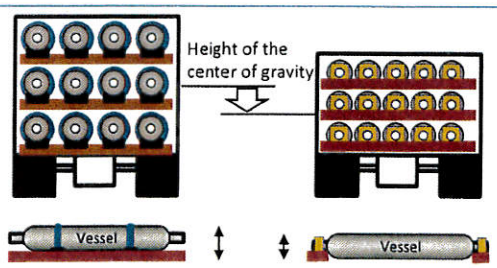
To adjust and improve regulations regarding the establishment and operation of HRSs, to increase the types of steel materials that can be used, and to establish a method to control the quality of hydrogen fuel.

② Research and Development of Cost-Competitive Equipment and Systems for FCVs and Hydrogen Refueling Stations

To improve the performance, cost-effectiveness, durability, and maintainability of devices and systems for the production, transportation, storage and refueling of hydrogen.

③ Research and Development of Technologies to Ensure Hydrogen Refueling Station Safety

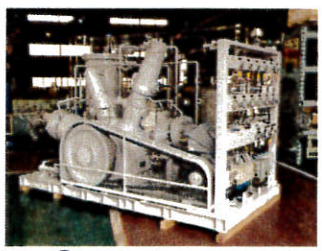
To improve social acceptance of HRSs, developing common tools for safety and security education and training, and is providing information to increase the public's understanding of hydrogen energy.



①Lowering its gravity center and space-saving of trailer

②-1 Hydrogen generator

DAINICHI Machine and Engineering



②-2 Hydrogen compressor

SUCTION GAS ENGINE MFG

Advancement of Hydrogen Technologies and Utilization Project

Project period: Fy2014-Fy2017

Objective

Focusing on H2 producing, transport and storage from renewable energy targeting 2040, various elemental technologies are studied.

Contents

①Low Cost Hydrogen Production Research and Development

R&D for alkaline water electrolysis for cost reduction and high durability.

②High-Efficiency Hydrogen Production Research and Development

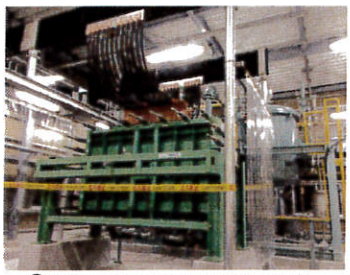
R&D to demonstrate the high efficiency for the high-temperature electrolysis

③Research and Development of Large-Scale Hydrogen Utilization Technologies

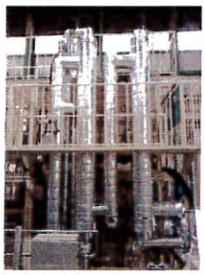
R&D on fundamental technology to realize large scale hydrogen liquefaction and storage system and hydrogen dry low NOx emission combustor for hydrogen power generation.

④Analysis and Development on Hydrogen as an Energy Carrier

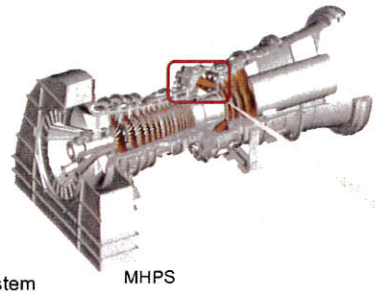
R&D for hydrogen carrier such as methanation system, organic chemical hydride.



①Large-scale water electrolysis



④High efficient methanation system



MHPS

③Hydrogen dry low NOx emission combustor

Development of Technologies for Realizing a Hydrogen Society

Project period: Fy2014-Fy2020

Objective

Establishment of a new energy system utilizing hydrogen to expand utilization and application of hydrogen.

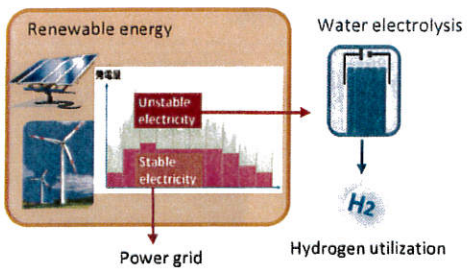
Contents

①Development of "Power to Gas"

To establish an implementable model for a "Power to Gas" energy system that combines technologies for producing hydrogen by the electricity from renewable energy, storing, transporting, and utilizing hydrogen.

②Development of Technologies for Large-Scale Hydrogen Supply Chain Systems

R&D for hydrogen gas turbine system and international supply chain system to expand hydrogen demand dramatically.



①Systems using Renewable Energy-derived Hydrogen

②Large-Scale Hydrogen Supply chain

富士電機機器制御株式会社
吹上事業所のご紹介

ＦＣＳ 生産本部 吹上工場

富士電機の事業・主要製品

Fuji Electric
Innovating Energy Technology

パワエレ機器
パワエレシステム
2017年度 統合


モータ　インバータ


無停電電源装置
（ＵＰＳ）

器　具
電磁開閉器、操作表示機器
配線用遮断器、漏電遮断器

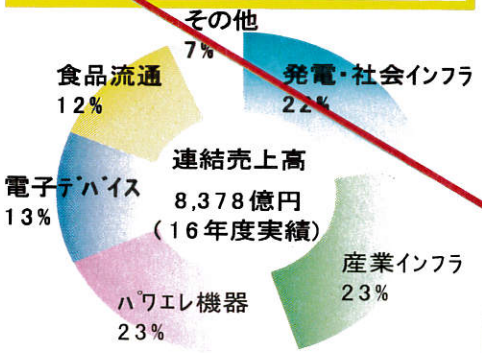

電磁開閉器


ブレーカ


コマンドスイッチ

食品流通
飲料・食品自動販売機
流通システム、通貨機器
ショーケース


自動販売機



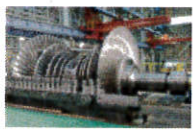
電子デバイス
パワー半導体、感光体、ディスク媒体


ＩＧＢＴモジュール


感光体


ディスク媒体

発電・社会インフラ
火力・地熱・水力発電設備
原子力発電関連機器、エネルギーマネジメントシステム、送変電設備


蒸気タービン


タービン発電機

産業インフラ
産業用ドライブシステム
プラント制御システム、計測システム
産業電源　民需向受配電設備


プラント制御システム　大容量整流設備

富士電機機器制御（株）の概要

Fuji Electric
Innovating Energy Technology

商号
富士電機機器制御（株）

業種
制御機器、受配電機器の開発・
製造・販売

代表者
代表取締役社長　森本　正博

本社
東京都中央区日本橋大伝馬町

設立
２００８（平成２０）年１０月

資本金
７６億円

連結子会社数
5社（国内２社、海外３社）

従業員数(連結)
3,３００名（非正規社員含む）

株主構成
富士電機㈱　６３％
シュナイダー・エレクトリック
ホールディングス㈱　３７％

富士電機機器制御㈱の概要

Fuji Electric
Innovating Energy Technology

富士電機の器具事業部門と、器具分野におけるグローバルトップ
メーカーである仏シュナイダー社の日本での器具事業を統合

富士電機
富士電機株式会社

Schneider Electric
シュナイダーエレクトリック
ホールディングス株式会社

2008年10月スタート
資本金　76億円

出資比率
63％

出資比率
37％

富士電機機器制御株式会社

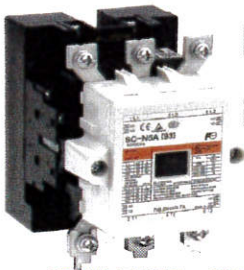
連結子会社：　秩父富士
富士電機大連
常熟富士電機
富士電機テクニカ
富士電機亜洲

ＦＣＳ 主要製品

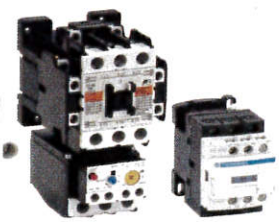
Fuji Electric
Innovating Energy Technology

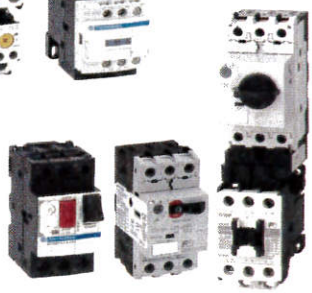
制御機器

シェアトップの電磁開閉器をはじめとしたＦＡコンポーネント機器



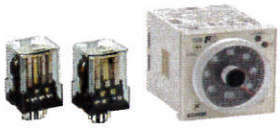
電磁接触器・電磁開閉器
国内シェア１位（50%）





マニュアルモータースタータ
国内シェア１位（75%）

操作表示機器
国内シェア２位（22%）

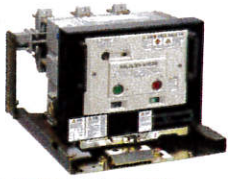


制御リレー・タイマー

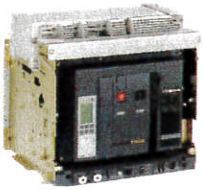
受配電機器

ビルや工場に電気を供給・分配する配電制御システムを構成する機器

配線用遮断器・漏電遮断器
国内シェア：配線用遮断器　２位(16%)
漏電遮断器　２位(16%)



高圧真空遮断器
国内シェア２位（21%）



低圧気中遮断器

高圧受配電用
デジタル形多機能リレー

エネルギー監視ユニット

ＦＣＳ 国内製造拠点

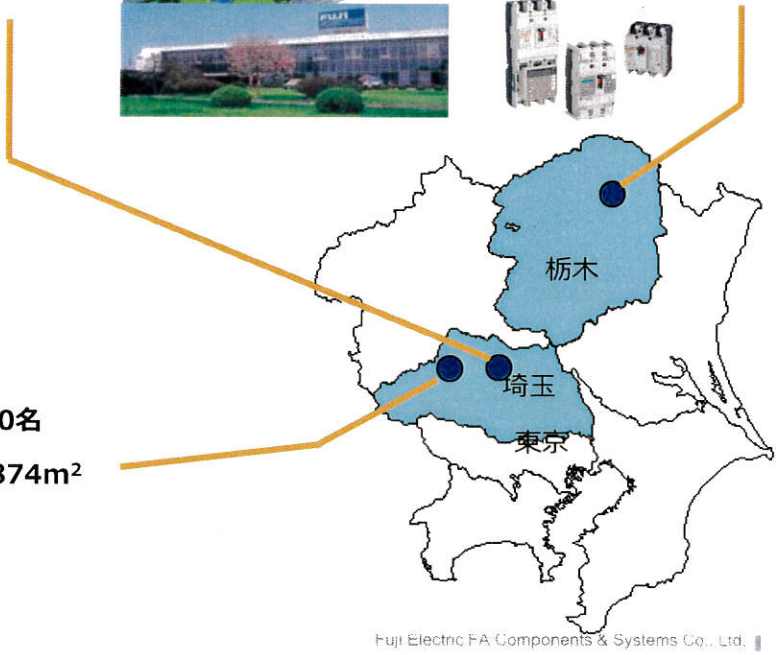
Fuji Electric
Innovating Energy Technology

吹上工場（埼玉県鴻巣市）

- □ 設立：1943年
- □ 従業員数： 約700名
- □ 敷地面積： 155,828m²

大田原工場（栃木県大田原市）

- □ 設立：1973年
- □ 従業員数 :約440名
- □ 敷地面積：117,332m²



秩父富士（埼玉県秩父郡小鹿野町）

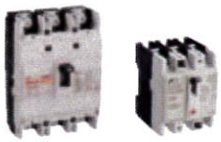
- □ 設立：1967年
- □ 従業員数：約510名
- □ 敷地面積 ：38,874m²

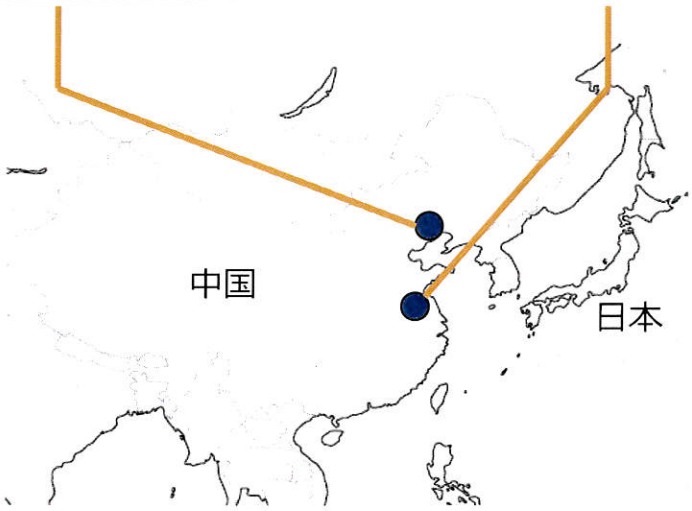
ＦＣＳ 海外製造拠点

Fuji Electric
Innovating Energy Technology

富士電機大連（FEDAC）（遼寧省大連市）

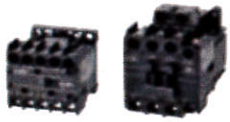
□ 設立：1994年
□ 従業員数：約700名
□ 敷地面積：50,265m²





常熟富士電機（CSFE）（江蘇省常熟市）

□ 設立：2001年
□ 従業員数：約400名
□ 敷地面積：30,700m²



吹上事業所 紹介

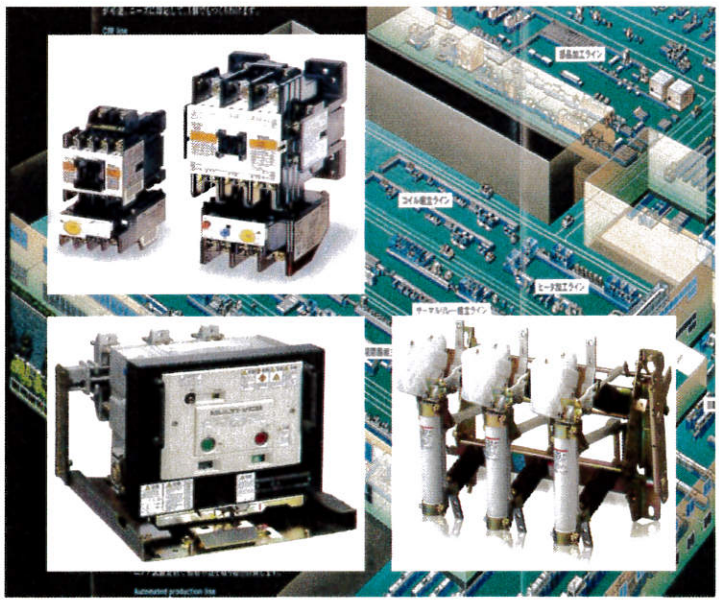
Fuji Electric
Innovating Energy Technology

TECHNO WING & TECHNO LAB

開発・評価部門の集約
(製品開発・生産技術・品質保証)

吹上工場

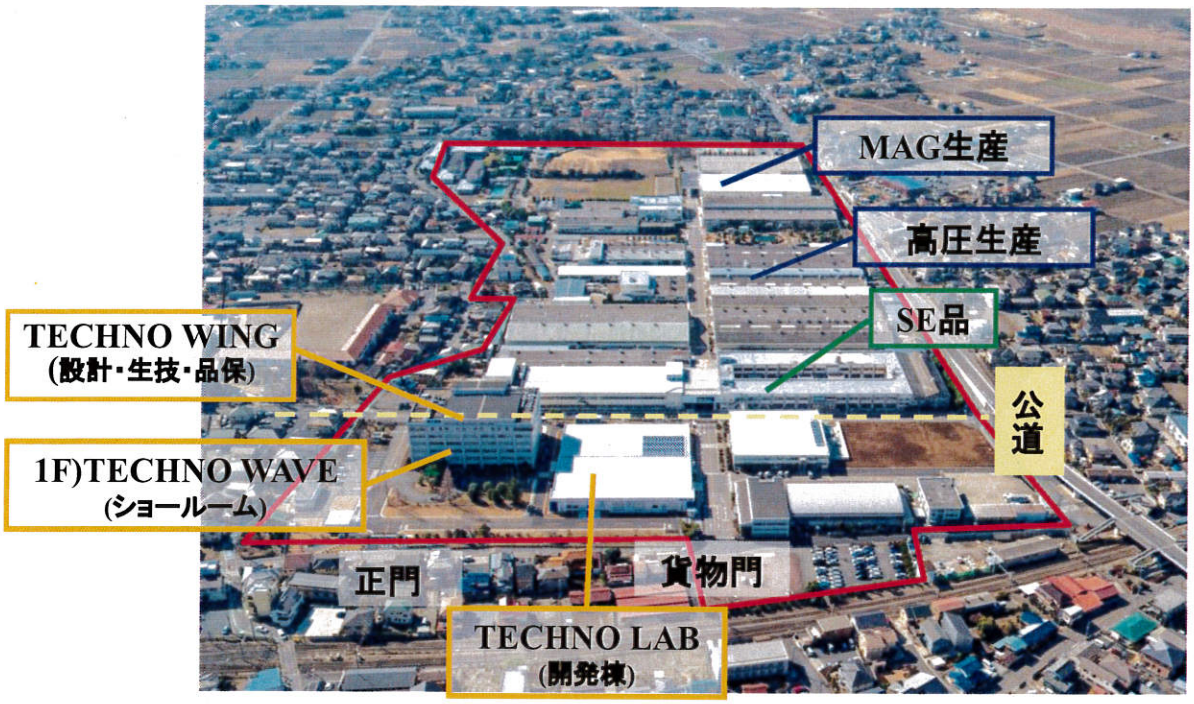
電磁開閉器(MAG)
高圧機器(VCB,LBS)



吹上事業所 概要

Fuji Electric
Innovating Energy Technology

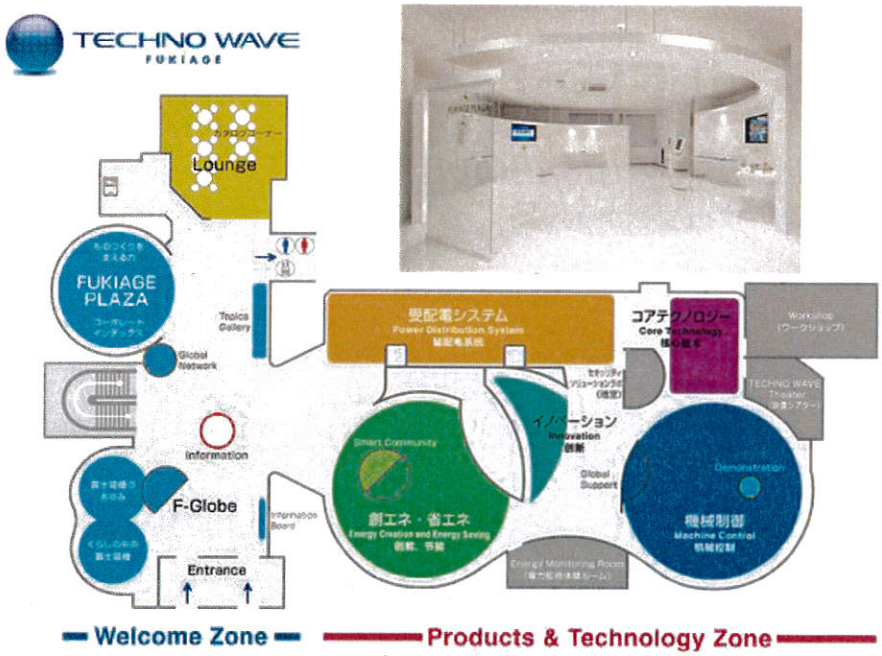
設立: 1943年3月1日
敷地面積: 155,828㎡
従業員数: 791名 (他関係会社118名)　開発部門:150名　工場部門:412名　生技・品証他:229名



TECHNO WAVE FUKIAGE (ショールーム)

Fuji Electric
Innovating Energy Technology

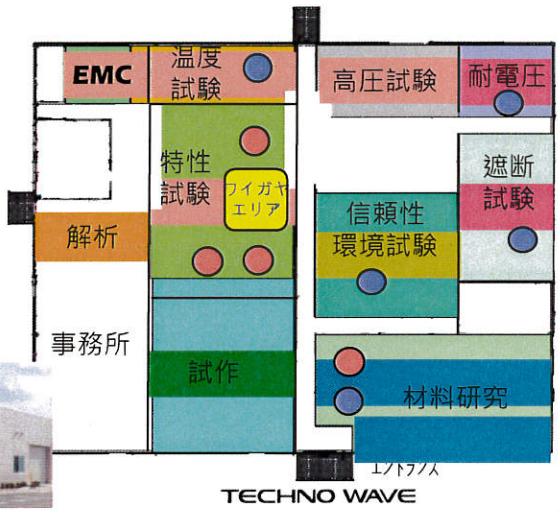
<コンセプト>
これからの受配電・制御機器の新しい姿を体験してもらえる場。
私たちの真摯な物づくりへの取り組みを感じてもらえる場。
そして、お客様との “つながり:Connect の場”



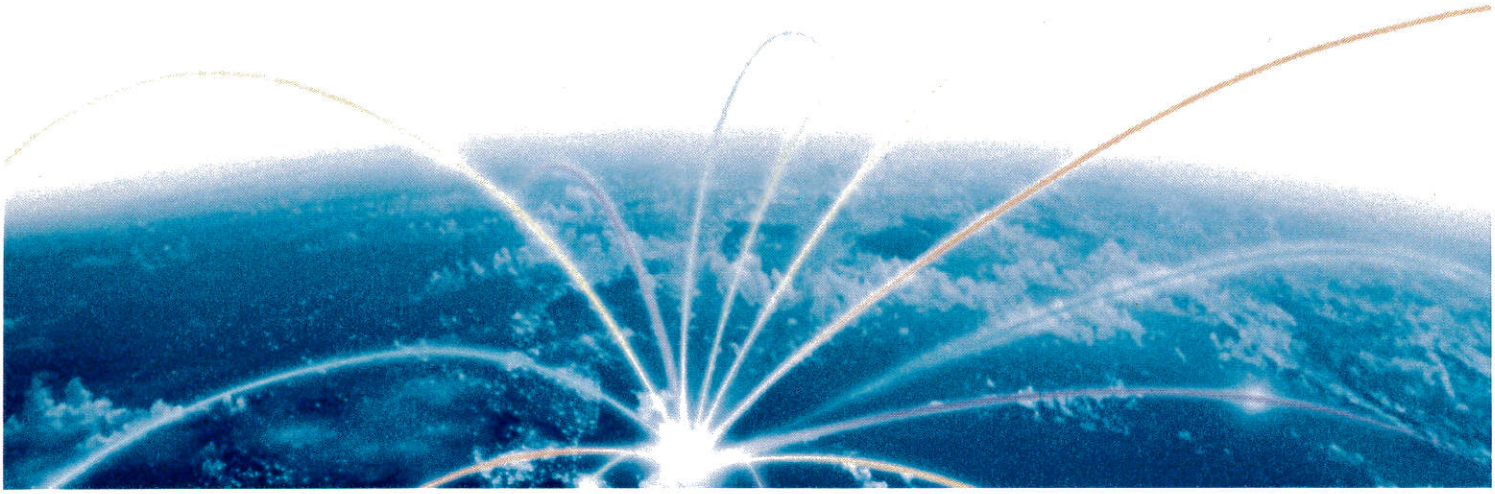
TECHNO LAB コンセプト

Fuji Electric
Innovating Energy Technology

1. 評価業務スピード向上　：　ワンフロアー貫評価試験
   ●　自動試験設備導入、　●　評価設備の増強
2. 開発チーム力を強化し、品質と信頼性のつくりこみ
   ：　設計/生技/評価技術（知恵）を集結
   ■　3現主義で ｺﾝｶﾚﾝﾄ課題解決
3. ｼｮｰﾙｰﾑと連動した魅せる化でお客様への商品ブランド力を向上



Fuji Electric
Innovating Energy Technology



PVケーブル規格 対比表

EN 50618 : 2014 Electric cables for photovoltaic systems	2 Pfg 1169/08.2007 Requirements for cables for use in photovoltaic-systems	JCS 4517 : 2015 太陽光発電システム用 ハロゲンフリーケーブル
1.5 Long term resistance of insulation to d.c.	1.5 Long term resistance of insulation to d.c.	6.5 直流電圧長期絶縁抵抗
1.6 Surface resistance of sheath	1.4 Surface resistance of sheath	6.3 シースの表面抵抗
9 Ozone resistance on complete cable	10 Ozone resistance at complete cable	6.15 完成品の耐オゾン性
10 Weathering/UV resistance on sheath	11 Weathering/UV resistance	6.16 耐候性/耐紫外線性
11 Dynamic penetration test	12 Dynamic penetration test	6.17 貫入性
15 Smoke emission of complete cable		
		6.21 発煙濃度
16 Assessment of halogens for all non-metallic materials	16 Assessment of halogens for all non-metallic materials	
		6.22 燃焼時発生ガスの酸性度及び導電率

1

JCS 4517 6.5 直流電圧長期絶縁抵抗

①長さ5.5mの完成品を1本切断
②試験片の両端から0.25mの位置にマーキングをし、一方の端で導体を露出
③試験片を浸すのに十分な量の3%食塩水を準備
④3%食塩水を85℃に加熱し、試験片を②のマーキングの位置まで浸漬
⑤導体-食塩水の間に直流900Vを印加　※導体:-極　食塩水:+極
⑥240時間後、試験片を取り出し、常温の水に②のマーキングの位置まで浸漬
⑦導体-水の間に交流600Vを印加

判定基準:⑦にて絶縁破壊なし

EN規格　試験方法　EN 50395 9項
完成品⇒コア
3%食塩水⇒10g/L食塩水
直流900V⇒直流1800V
⑥以降⇒⑥の240時間終了後、サンプルの外観をチェックするのみ

2

JCS 4517　6.3　シースの表面抵抗

①長さ約250mmの完成品を3本切断
②試験片の表面をアルコールで洗浄し、中央部で間隔が100mmとなるように銅線（外径0.2～0.6mm）で電極を作成
③試験片を20±2℃、65±5%のチャンバー内に投入
④24時間後、試験片を取り出し、ただちに電極間で絶縁抵抗を測定（直流100～500Vを加えてから1分後の値を測定）

判定基準：④にて$10^9\Omega$以上

EN規格　試験方法　EN 50395 11項
ちがいなし

3

JCS 4517　6.15　完成品の耐オゾン性

①適当な長さの完成品を1本切断
②試験片をオゾンチャンバー内に投入
③オゾンチャンバー内を温度25±2℃、オゾン濃度275±25ppmの雰囲気に調整
④24時間後、サンプルの表面を確認

判定基準：④にてクラックがないこと

EN規格　試験方法　EN 60811-403、 EN 50396 8.1.3項
高濃度試験のみ⇒Method A（高濃度）、Method B（低濃度）のどちらかを選択

4

JCS 4517 6.16 耐候性/耐紫外線性

①適当な長さの完成品を1本切断
②試験片をUVチャンバ内にセット
③UV照射を開始
　サイクル：102分 照射 + 18分 照射+水噴霧
　照射： 60W/m2（300～400nm）
　ブラックスタンダード温度：65℃　相対湿度：65%
④720時間後、試験片をUVチャンバから取り出し、サンプルの表面を確認

判定基準：④にてクラックがないこと

EN規格　試験方法　ANNEX E
60W/m2⇒43W/m2
65℃⇒60℃
65%y⇒50℃
④以降⇒④の720時間終了後、サンプルの外観
をチェックした後、シースの引張試験を実施、
強さ・伸びともに初期値の70%以上

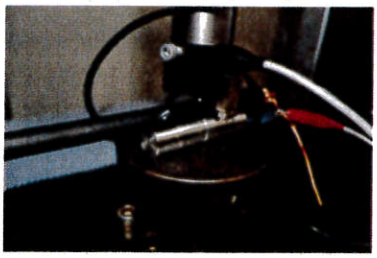
5

JCS 4517 6.17 貫入性

①長さ約200mmの完成品を1本切断
②試験片の中央部で25mmの間隔で4箇所にマーキングをし、一方の端で導体を露出　※マーキングは90°に回転させながら一周するように
③圧縮試験機（=引張試験機）にばね鋼製ニードルを取り付け、試験片のマーキングがその下にくるように保持
④導通検知器のリード線の一方を試験片の導体、もう一方をニードルあるいは試験片台座に接続
⑤導通が検知（すなわち、試験片の被覆物が全て破ける）まで1N/Sの速度で圧縮、
検知したときの圧縮力を記録、これを4箇所のマーキングにて実施

判定基準：⑤にて平均値が150×√d以上であること　d：導体外径, mm

EN規格　試験方法　ANNEX D
ちがいなし

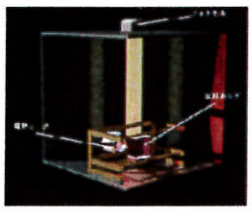


6

JCS 4517 6.21 発煙濃度

①縦横76mm、厚さ0.5±1mmのシートサンプルを5枚準備
②JIS C 60695-6-31(IEC 60695-6-31)に基づき試験を実施

判定基準:
5枚の試験の結果、平均値が150以下でなければならない。ただし、始めの3回の値はがいずれも150以下である場合は、3回で合格となる。



EN規格　試験方法　EN 61034-2
試験に用いる試験片、試験装置、試験手順等、全くちがう

7

IEC61034 発煙濃度試験

3mキューブ試験設備

試験中のケーブル燃焼

3mキューブ試験　IEC61034, BS6853-D

3m立方の試験室内で、アルコール燃料を用い、長さ1mのケーブル試料を燃焼させ、試験室内の光の透過量を測定して発煙量を評価。

8

Household Goods Quality Labeling Law Handbook

Textile Goods

Plastic Manufactured Goods

Electrical Appliances

Miscellaneous Manufactured Goods

CAA
Consumer Affairs Agency

METI
Ministry of Economy, Trade and Industry

Separate attachment

We all use household goods in our daily life. It is necessary for the general consumer to correctly understand the quality of these goods when purchasing or using them, and their quality, performance and methods of use should be correctly indicated.

The Household Goods Quality Labeling Law has been established to meet this requirement. The Law sets out what must be displayed regarding the quality, etc. of goods by the manufacturers, etc. and how they should be displayed, for household goods being used by the general consumer on a daily basis. Its purpose is to provide appropriate information to consumers when they purchase these products.

This Household Goods Quality Labeling Law Handbook has been prepared with the aim of enhancing a correct understanding of the Household Goods Quality Labeling Law by the general consumer and also by business entities.

INDEX

1 The Purpose of the Household Goods Quality Labeling Law

2 The Mechanism of the Household Goods Quality Labeling Law

3 Labeling of Textile Goods

4 Labeling of Plastic Manufactured Goods

5 Labeling of Electrical Appliances

6 Labeling of Miscellaneous Manufactured Goods

7 Introduction to the Website

8 Inquiries

1 The Purpose of the Household Goods Quality Labeling Law

The Household Goods Quality Labeling Law aims to to make the labeling of household goods relating to their quality fair and appropriate so that the interests of general consumers can be protected. (Article 1).

2 The Mechanism of the Household Goods Quality Labeling Law

①Designation of Household Goods (Article 2)

Among textile goods, plastic manufactured goods, electrical appliances, and miscellaneous manufactured goods - those which are difficult for consumers to evaluate and identify in terms of quality at the time of purchase, particularly those with a strong need for quality identification - have been designated "Household Goods Requiring Labeling of Quality" by Cabinet Order.

②Labeling agents (Article 2)

The Labeling Agents denote the manufacturer or the vendor, or the labeling agent providing labeling on their behalf.

③Labeling Standards (Article 3)

A consistent method of labeling (Labeling Standards) has been established for designated goods. Specifically, the standards consist of particulars to be indicated, such as components, performance, uses, cautions for use (display items), and rules for labeling (observance items) for each item.

④Instructions, Official Announcement (Article 4)

The Prime Minister or the Minister of Economy, Trade and Industry may instruct the manufacturer or distributors or labeling agents to provide labeling in accordance with the law, in the case that they are not provided or a product is not labeled in accordance with the labeling standards.

If a manufacturer, etc. does not follow such instructions, the Minister may announce publicly

⑤Supervision (Article 19)

To enforce this law, the Prime Minister or the Minister of Economy, Trade and Industry may conduct onsite inspections or collect reports from manufacturers, etc.

The authority for such onsite inspections, etc. has been delegated to the Bureau of Economy, Trade and Industry or to individual prefectures.

3 Labeling of Textile Goods

1 Designated items for labeling and particulars to be displayed

Item				Display items			Additional items
				Composition of fibers	Home washing, etc. care labeling	Water repellency (*4)	Name of labeler, and contact address
1	Yarn (*1)			○	–	–	○
2	Woven fabrics, knitted fabrics, and lace (limited to those wholly or partially made of the yarn mentioned in 1.)			○	–	–	○
3	Clothing (*2)	(1) Jackets		○(*5)	○	–	○
		(2) Trousers or pants		○	○	–	○
		(3) Skirts		○	○	–	○
		(4) Dresses		○	○	–	○
		(5) Pullovers, cardigans, and other sweaters.		○	○	–	○
		(6) Dress shirts, open-necked shirts, polo shirts, and other shirts.		○	○	–	○
		(7) Blouses		○	○	–	○
		(8) Aprons, cooking aprons, business and work wear.		○	○	–	○
		(9) Overcoats, topcoats, raincoats, and other coats.	Coats for kimono using only specified fabrics (*3) as the cover material.	○ (*5)	–	○	○
			Others	○(*5)	○	○	○
		(10) Rompers and children's overalls.		○	○	–	○
		(11) Underwear	Of a single kind of fiber: Printed	○	○	–	○
			Of a single kind of fiber: Others	○	–	–	○
			For Japanese clothes using only specified fabrics (*3) as the cover material.	○	–	–	○
			Others	○	○	–	○
		(12) Nightwear		○	○	–	○
		(13) Socks		○	–	–	○
		(14) Tabi (Japanese-style socks to be worn with kimono)		○	–	–	○
		(15) Gloves		○	–	–	○
		(16) Handkerchiefs		○	–	–	○
		(17) Blankets		○	○	–	○
		(18) Sheets		○	○	–	○

Item		Display items			Additional items
		Composition of fibers	Home washing, etc. care labeling	Water repellency (*4)	Name of labeler, and contact address
(19) Towels and tenugui (Japanese-style hand towels)		○	–	–	○
(20) Haori (short coats to be worn over kimono) and kimono (traditional Japanese clothes)	For Japanese clothes using only specified fabrics (*3) as the cover material.	○	–	–	○
	Others	○	○	–	○
(21) Mufflers, scarves, and shawls.		○	–	–	○
(22) Dressing gowns		○	○	–	○
(23) Curtains		○	○	–	○
(24) Carpets (limited to those with piles)		○	–	–	○
(25) Coverlets (limited to those made of towels)		○	○	–	○
(26) Futon (Japanese-style quilts or mattresses)		○	–	–	○
(27) Blanket covers, futon covers, pillow covers and bed spreads		○	○	–	○
(28) Table cloths		○	–	–	○
(29) Neckties		○	–	–	○
(30) Swimming wear		○	–	–	○
(31) Furoshiki (Japanese-style wrapping cloths)		○	–	–	○
(32) Obi (Japanese-style sash belts for kimono)		○	–	–	○
(33) Objijime (sash fasteners) and Haori strings		○	–	–	○

*1 Limited to those with yarn made up totally or partially of cotton, wool, silk, hemp (limited to flax or ramie), viscose rayon, cuprammonium filament, acetate fibers promix fibers, nylon fibers, vinylon fibers, polyvinylidene chloride synthetic fibers, polyvinyl chloride synthetic fibers, polyacrylonitrile synthetic fibers, polyester synthetic fibers, polyethylene synthetic fibers, polypropylene synthetic fibers, polyurethane synthetic fibers, polyclar fibers and glass fibers.

*2 Limited to textile products (excluding electrically heated items) produced or fabricated totally or partially with either yarns indicated in 1 or woven fabrics, knitted fabrics or lace indicated in 2.

*3 Specified fabrics are either fabrics that have a silk composition of 50% or higher or fabrics that have either their warp or weft composed entirely of silk.

*4 Indication of water repellency is not necessarily required for items other than raincoats ,etc. that require water repellency.

*5 For items using fillings, the cover fabric, lining fabric and filling materials (with the exception of auxiliary materials used in pockets, elbows, collars, etc. to partially adjust the shape) shall be indicated.

2 Particulars to be displayed

Composition of fibers

Names of fibers have been specified in the "Textile Goods Quality Labeling Regulations." (Designated terms). Details to be displayed will be indicated together with a percentage breakdown of the mix.

Terms indicating the names of fibers

Fiber		Designated terms (Indication name)
Cotton		綿
		コットン
		COTTON
Wool	Sheep wool	毛
		羊毛
		ウール
		WOOL
	Angora rabbit hair	毛
		アンゴラ
	Cashmere	毛
		カシミヤ
	Mohair	毛
		モヘヤ
	Camel	毛
		らくだ
		キャメル
	Alpaca	毛
		アルパカ
	Others	毛
Silk		絹
		シルク
		SILK
Hemp (limited to flax or ramie)		麻
Viscose rayon	Those with average polymerization degree of 450 or more	レーヨン
		RAYON
		ポリノジック
	Others	レーヨン
		RAYON
Cuprammonium filament		キュプラ
Acetate fibers	Those where the hydroxyl groups are 92% or more acetic acid.	アセテート
		ACETATE
		トリアセテート
	Others	アセテート
		ACETATE
Promix fibers		プロミックス
Nylon fibers		ナイロン
		NYLON

Composition of fibers

Fiber		Designated terms (Indication name)
Aramid fibers		アラミド
Vinylon fibers		ビニロン
Polyvinylidene chlorate synthetic fibers		ビニリデン
Polyvinyl chloride synthetic fibers		ポリ塩化ビニル
Polyester synthetic fibers		ポリエステル
		POLYESTER
Polyacrylonitrile synthetic fibers	Those that are at least 85% acrylonitorile	アクリル
	Others	アクリル系
Polyethylene synthetic fibers		ポリエチレン
Polypropylene synthetic fibers		ポリプロピレン
Polyurethane synthetic fibers		ポリウレタン
Polyclar fibers		ポリクラール
Polylactic acid fibers		ポリ乳酸
Glass fibers		ガラス
Carbon fibers		炭素繊維
Metal fibers		金属繊維
Feather	Down	ダウン
	Other	フェザー
		その他の羽毛
Fibers other than those listed above		Names of fiber or brand name to be indicated in parentheses with the phrase「指定外繊維(Fibers not designated)」. (However, the names of fibers or brand names that can be shown inside the parentheses will be limited to one (1) only).

Home washing, etc. labeling

Home washing instructions, suitability of chlorine bleaching, ironing method, dry cleaning, wringing instructions, and drying instructions will be indicated using the care labeling symbols of JIS L0217. (Wringing and drying are arbitrarily determined by the labeler). Care labeling symbols shall be attached firmly in a prominent location.

Water repellency

When indicating water repellency, it should be labeled either「はっ水(水をはじきやすい)」or「撥水(水をはじきやすい)」

3 Name and address of the labeler and method of labeling

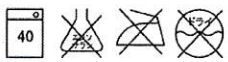
The name (full name or trade name) and contact address (address or phone number) must be indicated in the particulars to be displayed in a prominent position, where they are readily visible to consumers.

4 Labeling examples

If labeling is made by only the sewn label.

(sewn label)

綿　100%



○○繊維(株)
TEL 03-9999-9999

If labeling is made by a sewn label and a hang tag.

(sewn label)

○○繊維(株)
TEL 03-9999-9999

+

(hang tag)

綿　100%

○○繊維(株)
TEL 03-9999-9999

4 Labeling of Plastic Manufactured Goods

1 Designated items for labeling and particulars to be displayed

Item		Particulars to be displayed							Additional items	
		Material plastic	Heat-resistant temperature	Cold-resistant temperature	Capacity	Dimensions	Number of sheets	Handling precautions	Name of labeler	Address or phone number
1 Wash basins, tubs, buckets, and bathroom utensils.	Wash basins	○	–	–	–	–	–	○	○	○
	Tubs	○	–	–	○	–	–	○	○	○
	Buckets	○	–	○	○	–	–	○	○	○
	Bathtub lids	○	○	–	–	○	–	○	○	○
	Bathroom utensils	○	–	–	–	–	–	○	○	○
2 Baskets		○	–	–	–	–	–	○	○	○
3 Trays		○	○	–	–	–	–	○	○	○
4 Water bottles		○	○	–	○	–	–	○	○	○
5 Tableware and kitchen utensils	Containers that require labeling of volume (garbage containers and other containers with lids, washing tubs, water bottles for refrigerator use, containers for beverages with closing seals, and containers using coolants, etc.)	○	○	○	○	–	–	○	○	○
	Containers that do not require labeling of volume (plates, bowls, glasses, sealed containers for food, lunch boxes, zaru baskets, chopstick stands, bread cases, etc.)	○	○	–	–	–	–	○	○	○
	Cutting board	○	○	–	–	○	–	○	○	○
	Ice trays	○	–	○	–	–	–	○	○	○
	Others	○	○	–	–	–	–	–	○	○
6 Polyethylene or polypropylene bags. (limited to those with film thickness of 0.05 mm or less, and supplied in individual packages in a set of less than 100 sheets)		○	–	○	–	○	○	○	○	○
7 Hot water bottles		○	○	–	○ Those that are for containing hot water	–	–	○	○	○
8 Portable toilet pots and toilet utensils (excluding fixed type)		○	○	–	–	–	–	○	○	○

4 Labeling of Plastic Manufactured Goods

2 Particulars to be displayed

The details of particulars to be displayed and rules for each item are defined in the "Plastic Manufactured Goods Quality Labeling Regulations."

Material plastics	To be labeled in accordance with the terms in the regulation to indicate the material plastics
Heat-resistant temperature	Heat-resistance test in accordance with JIS S2029 (for plastic tableware) to be applied
Cold-resistant temperature	Test to be made in accordance with the regulations
Capacity	If larger than 1 liter, in units of liters; if smaller, in milliliters
Dimensions	To be measured in accordance with the methods described in the regulation
Number of sheets	Indicates the number of polyethylene or polypropylene bags contained in each package
Handling precautions	Indicates items set for each item, such as "Do not place near fire", etc.

3 Name and address of the labeler and method of labeling

The name (full name or trade name) and contact address (address or phone number) must be indicated in the particulars to be displayed, which are to be shown in a prominent location in a manner that is easy for consumers to understand, for each plastic manufactured product.
Handling precautions shall be added in a manner such that they cannot be separated easily from the main body, such as by embossing, or through affixation of labels.

4 Labeling samples

(Kitchen containers)

原料樹脂　ポリプロピレン
耐熱温度　120℃
耐冷温度　−20℃
容量　300ml
取扱い上の注意
・火のそばに置かないでください。
・----------
○○樹脂(株)
住所　東京都千代田区○○町○○番地

(Polyethylene bags)

原料樹脂　ポリエチレン
耐冷温度　−30℃
寸法　外形400mm×500mm
　　厚さ　0.03mm
枚数　50枚
取扱い上の注意
・火のそばに置かないでください。
・----------
○○樹脂(株)
TEL　03-9999-9999

5 Labeling of Electrical Appliances

1 Designated items for labeling and particulars to be displayed

Item	Particulars to be displayed									Additional items
1 Electric washing machines (limited to those with washing basin)	Standard water consumption	Outer dimensions	Handling precautions	–	–	–	–	–	–	Labeler name
2 Electric rice cookers	Maximum cooking capacity	Classification	Water evaporation amount	Annual power consumption	Power consumption per rice cooking	Hourly power consumption for keeping cooked rice warm	Hourly power consumption for timer reservation	Hourly stand-by power consumption	Handling precautions	Labeler name
3 Electrically heated blankets	Type	Composition of fibers	Handling precautions	–	–	–	–	–	–	Labeler name
4 Electrical cleaners (vacuum type, and excludes those that use batteries for power source)	Suction power rate	Weight	Handling precautions	–	–	–	–	–	–	Labeler name
5 Electrical refrigerators (excludes those that use a thermal (peltiert) device)	Rated storage capacity	Power consumption	Outer dimensions	Handling precautions	–	–	–	–	–	Labeler name
6 Ventilation fans (limited to those that have propeller shaped fans)	Size of fan blade	Wind volume	Handling precautions	–	–	–	–	–	–	Labeler name
7 Air conditioners (limited to those with a combined rated motor power consumption of less than 3 kW, and rated heater power consumption of less than 5 kW, and excludes electrical cool wind blowers and those that use a thermal (peltiert) device.)	Cooling capacity · Cooling power consumption	Classification	Heating capacity (only those that can heat)	Heating power consumption (only those that can heat)	Energy consumption efficiency is annual performance factor	Handling precautions	–	–	–	Labeler name
8 Television receivers	Annual power consumption	Classification	Receiver size	Handling precautions	–	–	–	–	–	Labeler name

5 Labeling of Electrical Appliances

Item	Particulars to be displayed									Additional items
9 Electric juicers, Electric mixers and Electric juicer-mixers	Type	Rated capacity	Handling precautions	–	–	–	–	–	–	Labeler name
10 Electric panel heaters	Heat radiation method	Temperature control method	Heating capacity	Type of heating medium	Handling precautions	–	–	–	–	Labeler name
11 Electric pots	Rated capacity	Handling precautions	–	–	–	–	–	–	–	Labeler name
12 Electric roasters	Type	Size of grill	Handling precautions	–	–	–	–	–	–	Labeler name
13 Electric shavers	Power source	Charging time	Type of dry batteries used and quantity	Handling precautions	–	–	–	–	–	Labeler name
14 Microwave ovens (limited to those with a rated high frequency wave output of less than 1 kW)	Outside dimensions	Effective size of oven	Classification	Annual power consumption of the microwave oven function	Annual power consumption of the oven function (for those with oven functions)	Annual stand-by power consumption	Annual power consumption	Handling precautions	–	Labeler name
15 Fluorescent desk lamp stands (excludes those that are affixed to the desk, etc.)	Use and luminance	Type of fluorescent lamp	Total luminous flux	Power consumption	Power consumption efficiency	Handling precautions	–	–	–	Labeler name
16 Electric griddles	Cooking plate	Handling precautions	–	–	–	–	–	–	–	Labeler name
17 Electric coffee makers	Type	With or without warming device	Maximum amount of water used	Handling precautions	–	–	–	–	–	Labeler name

2 Particulars to be displayed

The details of particulars to be displayed and rules for each item are defined in the "Electrical Appliances Quality Labeling Regulations."

3 Name and address of the labeler and method of labeling

The name (full name or trade name) must be indicated in the particulars to be displayed, which is to be shown in a prominent location in a manner that is easy for consumers to understand, for each product.
Handling precautions shall be indicated on the main body or in the operation manual.

4 Labeling samples

(Electric washing machine)

標準使用水量　120リットル
外径寸法　幅　650mm
奥行き　385mm
高　さ　855mm
使用上の注意
・使用方法に関する注意事項
・点検・手入れに関する注意事項
・設置に関する注意事項

(株)○○電気

(Electric pot)

定格容量　1.5リットル
使用上の注意
・使用方法に関する注意事項
・点検・手入れに関する注意事項

(株)○○電気

6 Labeling of Miscellaneous Manufactured Goods

1 Designated items for labeling and particulars to be displayed

Item		Particulars to be displayed								Additional items	
1 Thermos bottles (limited to those with double-walled glass inner vacuum bottle for table use, or those with double-walled stainless steel inner vacuum bottle mainly for beverages to be taken outdoors.)		Product name	Actual capacity	Heat-insulating property	Kind of material	Handling precautions	–	–	–	Labeler name	Address or phone number
2 Bags (limited to those that use cowhide, horse leather, pigskin, sheepskin, or goat skin)		Type of leather	Care and storing method	–	–	–	–	–	–	Labeler name ★	Address or phone number
3 Umbrellas		Composition of fiber of cloth	Length of ribs	Handling precautions (limited to beach and garden parasols)	–	–	–	–	–	Labeler name	Address or phone number
4 Synthetic detergents. (excluding those that contain abrasives and those for cosmetic use.), soap for laundry or kitchen use and detergents for household or furniture use (excluding those containing abrasives)		Product name	Components	Liquid property	Uses	Net contents	Normal amount to be used	Handling precautions	–	Labeler name	Address or phone number
5 Household or furniture wax		Product name	Components	Type	Uses	Net contents	Normal amount to be used	Handling precautions	–	Labeler name	Address or phone number
6 Urethane foam mattresses (limited to those with maximum thickness of urethane foam part over 50 mm) and spring mattresses.	Urethane foam mattresses	Material	Construction	Dimensions	Hardness	Recovery rate	Outer material composition	Handling precautions	–	Labeler name	Address or phone number
	Spring mattresses	Construction	Dimensions	Shape of coil spring	Number of coil springs	Material type of coil spring	Material of padding	Outer material composition	Handling precautions	Labeler name	Address or phone number
7 Shoes (limited to those that use synthetic leather on the instep and either rubber or synthetic resin on the soles, or a mixture of the same, with the upper leather and sole bonded together by adhesive).		Instep material	Sole material	Oil resistance of soles	Handling precautions	–	–	–	–	Labeler name	Address or phone number

Item	Particulars to be displayed									Additional items	
8 Gloves that are wholly or partly made of leather or synthetic leather	Kind of materials	Size	Handling precautions	–	–	–	–	–	–	Labeler name ★	Address or phone number
9 Desks and tables	External dimensions	Top board material	Surface treatment	Handling precautions	–	–	–	–	–	Labeler name	Address or phone number
10 Chairs, stools and zaisu (legless chairs used in a tatami room)	Dimensions	Structural materials	Surface treatment	Lining materials	Cushion materials	Handling precautions	–	–	–	Labeler name	Address or phone number
11 Chests of drawers	Dimensions	Surface materials	Surface treatment	Handling precautions	–	–	–	–	–	Labeler name	Address or phone number
12 Synthetic rubber cutting boards	Material used	Heat resistance	Cold resistance	Handling precautions	–	–	–	–	–	Labeler name	Address or phone number
13 Jackets, trousers, skirts, dresses, coats, and pullovers, cardigans and other sweaters made wholly of or partly using leather or synthetic leather.	Kind of material	Handling precautions	–	–	–	–	–	–	–	Labeler name ★	Address or phone number
14 Paints	Product name	Color	Components	Uses	Net contents	Coating area	Method of use	Care of painting tools	Handling precautions	Labeler name	Address or phone number
15 Tissue paper and toilet paper	Dimensions	Number of sheets	–	–	–	–	–	–	–	Labeler name	Address or phone number
16 Tableware and kitchen utensils painted with Japanese lacquer or cashew nut resin coating (limited to those made of wood and synthetic resins)	Product name	Type of surface painting	Base material	Handling precautions	–	–	–	–	–	Labeler name	Address or phone number

6 Labeling of Miscellaneous Manufactured Goods

Item	Particulars to be displayed									Additional items	
17 Adhesives(excludes animal-based and asphalt-based items)	Kind of product	Components	Toxicity	Uses	Net contents	Handling precautions	–	–	–	Labeler name	Address or phone number
18 Tableware and kitchen utensils made of tempered glass	Product name	Type of tempering	Handling precautions	–	–	–	–	–	–	Labeler name	Address or phone number
19 Tableware and kitchen utensils made from borosilicate glass or glass ceramics	Product name	Classifications of use	Heat-resistant temperature difference	Handling precautions	–	–	–	–	–	Labeler name	Address or phone number
20 Shopping carts	Size of bag or basket	Weight	Handling precautions	–	–	–	–	–	–	Labeler name	Address or phone number
21 Sunglasses (excludes prescription sunglasses)	Product name	Lens material	Frame materials	Visible ray transmission	Ultraviolet ray transmission	Handling precautions	–	–	–	Labeler name	Address or phone number
22 Toothbrushes (excludes electrical toothbrushes)	Stem material	Bristle material	Bristle hardness	Heat-resistant temperature	–	–	–	–	–	Labeler name	Address or phone number
23 Aluminium foil for serving food or kitchen use	Size	Handling precautions	–	–	–	–	–	–	–	Labeler name	Address or phone number
24 Baby feeding bottles	Product name	Kind of material	Shape of nipple hole	Bottle capacity	Handling precautions	–	–	–	–	Labeler name	Address or phone number
25 Pots and pans (limited to those that are made of aluminium, porcelain-clad iron, stainless iron, or copper, and excludes those with a capacity exceeding 10 liters or those with heaters installed.)	Surface treatment	Kind of material	Dimensions	Full water capacity	Handling precautions	–	–	–	–	Labeler name	Address or phone number

Item		Particulars to be displayed									Additional items	
26 Kettles (limited to those that are made of aluminium, porcelain-clad iron, stainless steel, or copper, and excludes those with a capacity exceeding 10 liters.)		Surface treatment	Kind of material	Full water capacity	Handling precautions	–	–	–	–	–	Labeler name	Address or phone number
27 Shoji paper		Manufacturing method	Material	Dimensions	Number of sheets (limited to flat sheets)	–	–	–	–	–	Labeler name	Address or phone number
28 Bleaching agents for clothes, kitchen or household use		Product name	Composition	Liquid property	Net contents	Method of use	Handling precautions	–	–	–	Labeler name	Address or phone number
29 Polishing agents for kitchen, household or furniture use (limited to those that contain abrasives)	Cleansers	Product name	Composition	Liquid property	Uses	Net contents	Handling precautions	–	–	–	Labeler name	Address or phone number
	Other polishing agents	Product name	Composition	Uses	Net contents	Handling precautions	–	–	–	–	Labeler name	Address or phone number
30 Water purifiers (limited to those with function to remove residual chlorine from tap water to obtain drinking water.)		Kind of material	Kind of filter	Filter flow rate	Minimum usable operating water pressure	Purification capacity	Indication of filter change frequency	Handling precautions	–	–	Labeler name	Address or phone number

★Note The labeler's name and contact address may be replaced by a display of the Quality Labeler Number, if a prior application and approval has been obtained from the Minister of Economy, Trade and Industry, for leather clothing and leather gloves (applies only to 100%-leather sewn products) and bags.

2 Particulars to be displayed

The details of the particulars to be displayed and rules are defined in the "Miscellaneous Manufactured Goods Quality Labeling Regulations."

3 Name and address of the labeler and method of labeling

In the particulars to be displayed, the name (full name or trade name) and contact address (address or phone number) must be indicated in a conspicuous location, readily visible to the consumer.
The details of the labeling method for each item are defined in the Miscellaneous Manufactured Goods Quality Labeling Regulations.

4 Labeling samples

(Desks and tables)

外形寸法　幅1800mm×奥行き970mm×高さ650mm
甲板の表面材　合成樹脂化粧繊維板(メラミン樹脂)
表面加工　ラッカー塗装
取扱い上の注意
・直射日光または熱を避ける旨
・加熱したなべ、湯沸かし等を直接置かない旨

○○○○株式会社
東京都千代田区○○町○○番地

(Leather clothing)

材料の種類　牛革
取扱い上の注意
・色落ち、硬化または劣化に関する注意事項
・保存、手入れ方法に関する注意事項
・アイロン掛けに関する注意事項

株式会社○○○○　TEL 03-9999-9999

(Japanese lacquer ware)

品名　合成漆器
表面塗装の種類　カシュー塗装
素地の種類　ポリプロピレン
使用上の注意
・使用方法の注意事項
・使用後の手入れ方法・保存方法

○○○○株式会社
東京都千代田区○○町○○番地

Household Goods Quality Labeling Law | **Search**

The details, commentaries and labeling examples for each Quality Labeling Regulation can be found on the website of the Consumer Affairs Agency.

URL ···→ http://www.caa.go.jp/hinpyo/index.html

8 Inquiries

For inquiries, please contact the Consumer Affairs Agency or the Ministry of Economy,Trade and Industry or your regional Bureau of Economy,Trade and Industry.

Consumer Safety Division, Consumer Affairs Agency

Sanno Park Tower 2-11-1 Nagata, Chiyoda-ku, Tokyo 100-6178

Tel : 03-3507-9201

Product Safety Division, Ministry of Economy, Trade and Industry

1-3-1 Kasumigaseki, Chiyoda-ku, Tokyo 100-8901

Tel : 03-3501-4707

Product Safety Office, Hokkaido Bureau of Economy, Trade and Industry

2-1-1, Kita 8-jo Nishi, Kita-ku, Sapporo 060-0808

Tel : 011-709-1792

Product Safety Office, Tohoku Bureau of Economy, Trade and Industry

3-3-1 Honcho, Aoba-ku, Sendai 980-8403

Tel : 022-221-4918

Product Safety Office, Kanto Bureau of Economy, Trade and Industry

Saitama Shintoshin Godo-chosha No.1 1-1 Shintoshin, Chuo-ku, Saitama, 330-9715

Tel : 048-600-0409

Product Safety Office, Chubu Bureau of Economy, Trade and Industry

2-5-2 Sannomaru, Naka-ku, Nagoya 460-8510

Tel : 052-951-0576

Product Safety Office, Kinki Bureau of Economy, Trade and Industry

1-5-44 Ohtemae, Chuo-ku, Osaka 540-8535

Tel : 06-6966-6098

Product Safety Office, Chugoku Bureau of Economy, Trade and Industry

6-30 Kami Hatchobori, Naka-ku, Hiroshima 730-8531

Tel : 082-224-5671

Product Safety Office, Shikoku Bureau of Economy, Trade and Industry

3-33 Sunport, Takamatsu 760-8512

Tel : 087-811-8526

Product Safety Office, Kyushu Bureau of Economy, Trade and Industry

2-11-1 Hakataeki Higashi, Hakata-ku, Fukuoka 812-8546

Tel : 092-482-5523

Commerce and Trade Division, Okinawa General Bureau

Naha 2nd Regional Godo-chosha No. 2 2-1-1 Omoromachi, Naha 900-8530

Tel : 098-866-1731

Compiled: October, 2010

Japan's Approach to Securing Product Safety

November 2017

Product Safety Division
Ministry of Economy, Trade and Industry
of Japan

1. Current trend of Product Accidents in Japan

Serious Product Accident Reporting and Disclosure System

Serious product accidents

* Serious Product Accident*
(a) death, (b) serious/fatal injury or disease for which treatment requires no less than 30 days, (c) fire,
(d) carbon monoxide poisoning,
(e) physical disability/ after affects of injury

Supplier has to report the accident to Government within ten days

The name & type of the product, a detailed account of the accident, the quantity of the products etc.

【Consumer Product Safety Act, Article 35】

Publication of accidents by the Government (CAA)

CAA releases accident outlines twice a week for general public and industries concerned.

【Consumer Product Safety Act, Article 36】

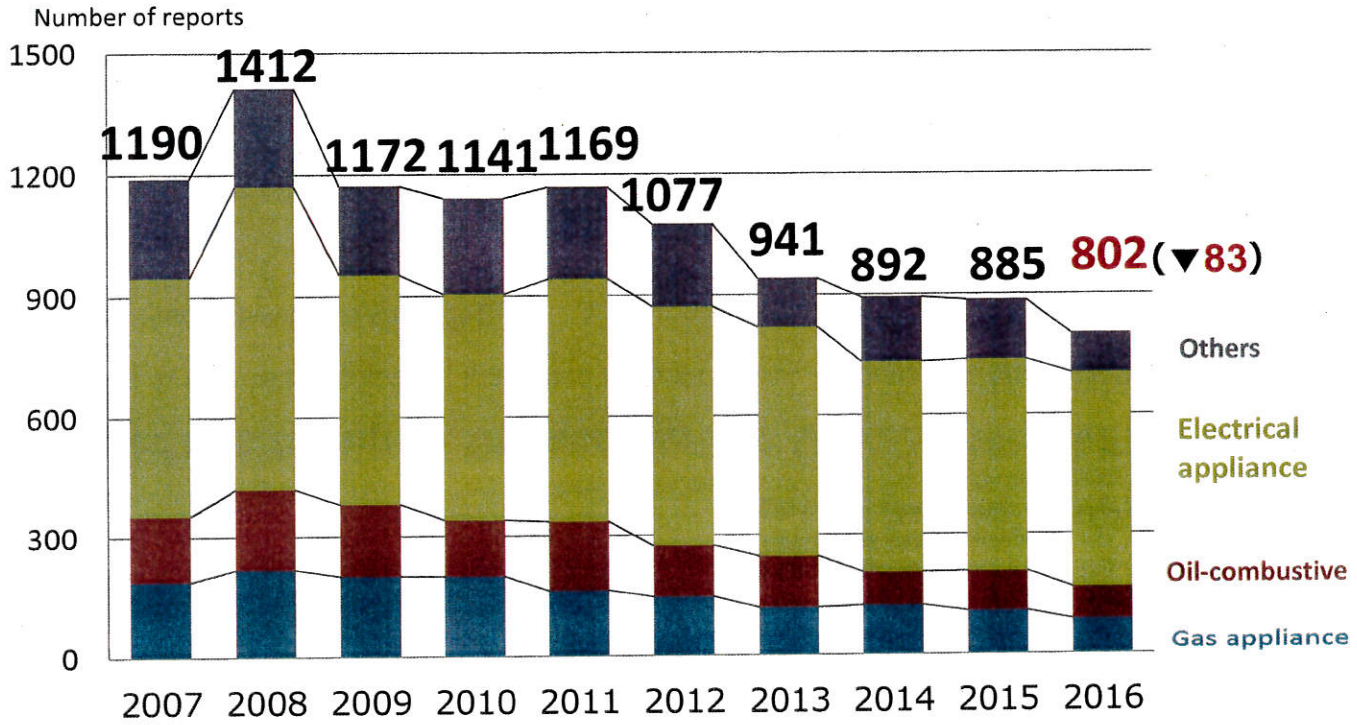
Disclosure of accident information (800 cases)

◆ **METI manages and endorses the counter measures of suppliers based on the investigation results**

◆ **NITE: Investigates the Cause of Accident**
(National Institute of Technology and Evaluation)

Trends of Serious Product Accidents

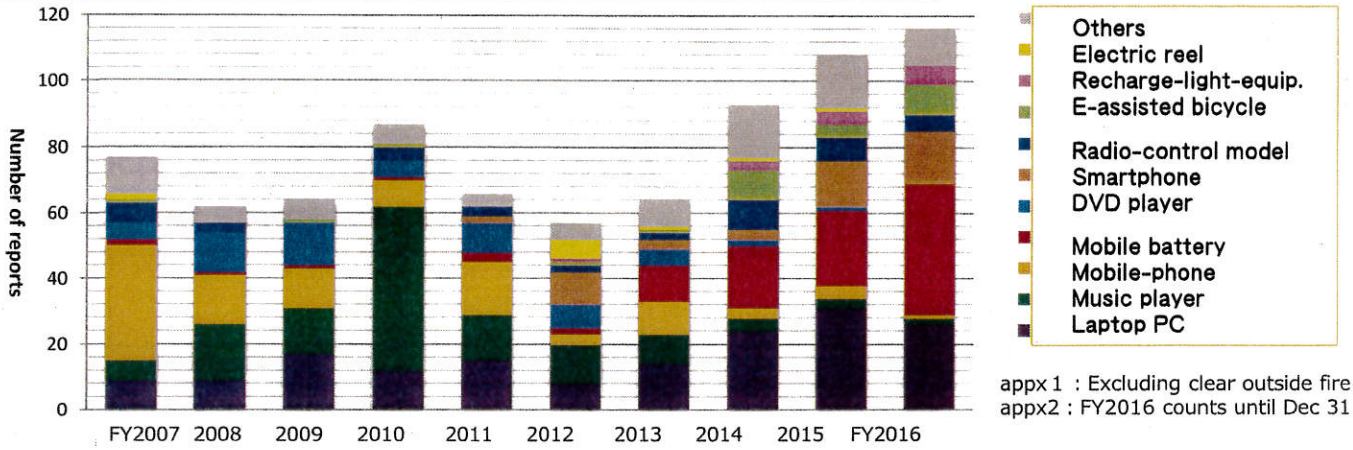
- **The total number of reports is decreasing over the last 9 years.**



Accidents of appliances using lithium-ion batteries in Japan

◆Production (pieces): 1,240 Million (2016), 980 Million (2015)
◆National Population: 126,720 Thousand (2017/10)

Number of Accidents of Appliances with lithium-ion batteries



appx 1 : Excluding clear outside fire
appx2 : FY2016 counts until Dec 31

Investigation of the cause of accidents (FY 2012- FY 2016, including Non-serious accidents)

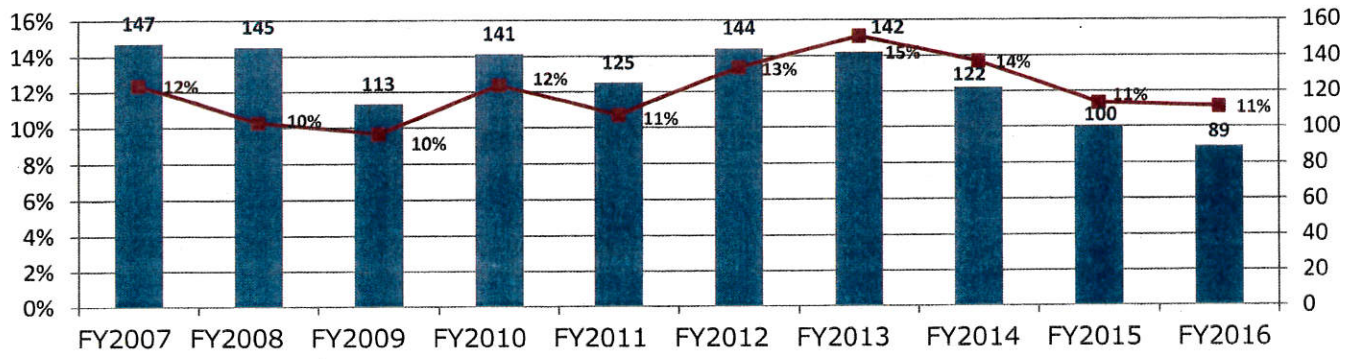
product origin	misuse /carelessness	Unknown cause	investigating	計
58	2	18	25	103

source : N I T E

Number of recalls

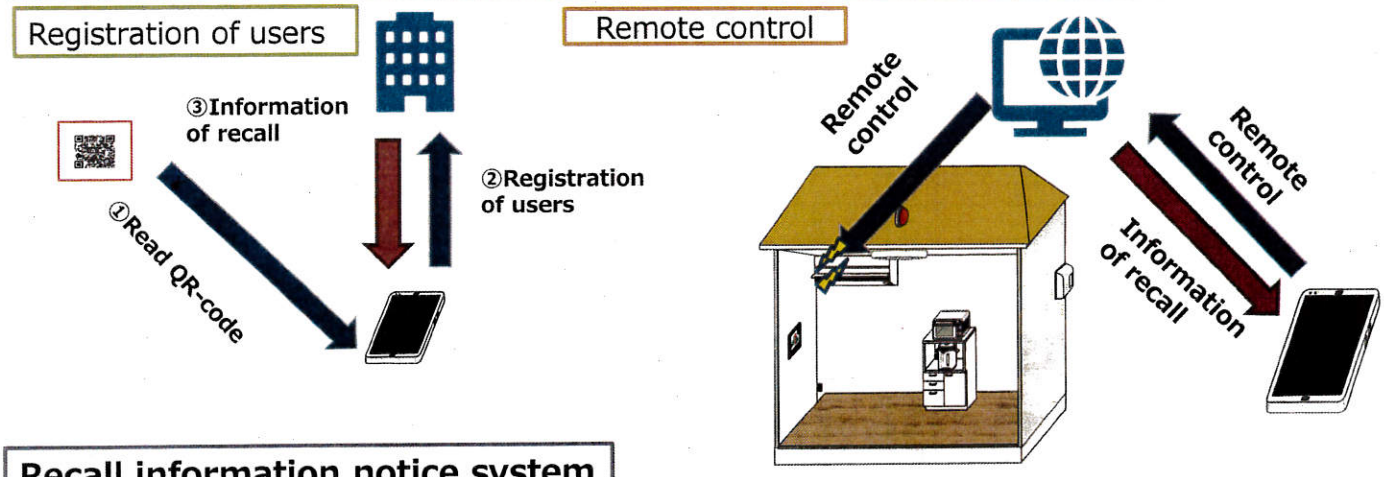
	FY2012	FY2013	FY2014	FY2015	FY2016
Triggered by serious accident	17	17	24	17	18
Triggered by non-serious accident	74	99	91	79	73
Total (cases)	91	116	115	96	91

Number of accidents caused by products not compatible with recall

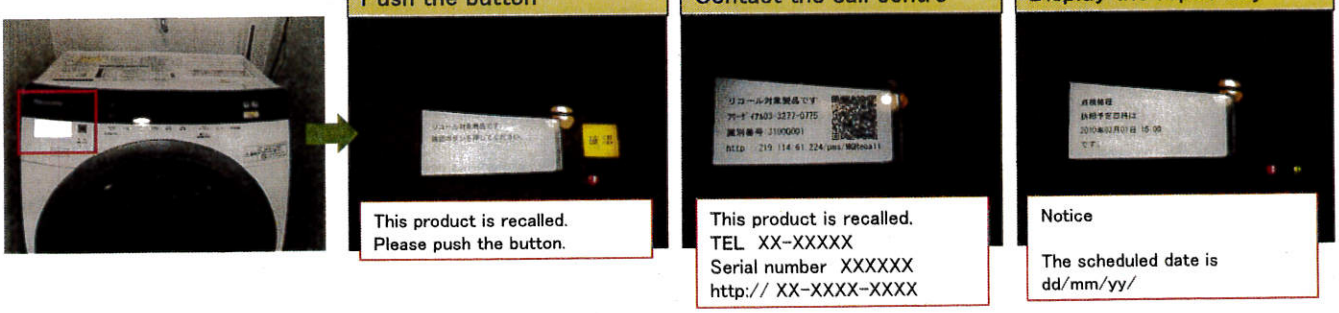


2. Internet of Things(IoT) technology related issue

Enhancing effectiveness of recalls with IoT technology



Recall information notice system



3. Online Product Safety, etc.

Product Safety over the Internet

- METI established a study group consisting of experts & stakeholders, including internet mall operating companies (Platforms) in 2017.
- The study group held four meeting between February and August of 2017 to discuss ideal approaches to establishing the policy systems and challenges: countermeasures such as market surveillance, cooperation between METI & Platforms and consumers' assessment for Safe products in online shopping.
- The group has summarized and compiled the result of discussion into a report this August.

(Background: current situation)

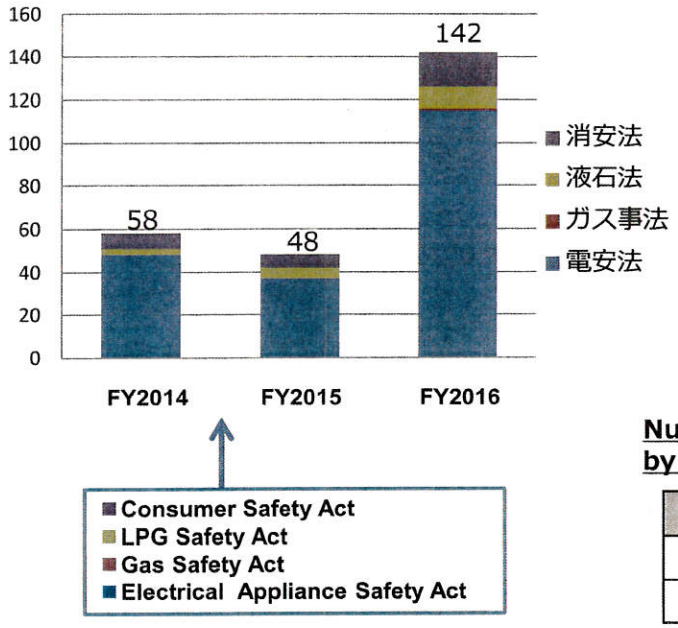
- In recent years, while borderless e-commerce has increased dramatically, the Product Safety Acts and traditional system have not adapted fully to the new and changing environment. For example, it is currently difficult to respond to illegal products and business operators.

【Members of the Study group】
・Representatives from government, academia, and the private sector, including attorneys and stakeholders in the fields of online trade and consumer affairs.

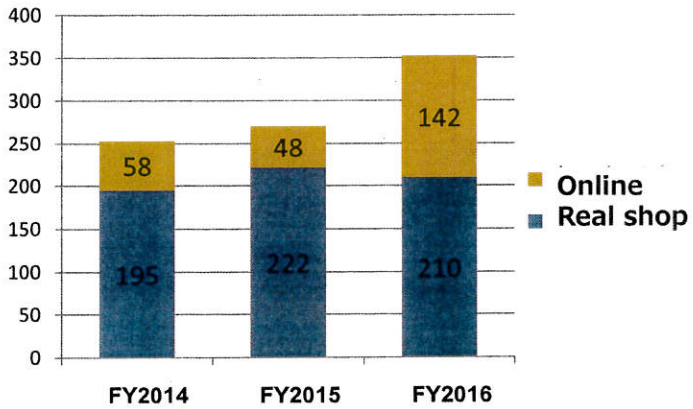
Violation cases found in Internet shopping

- As the trading volume of internet shopping expands, various violation cases are increasing

Number of violations on Internet sales against Product Safety Acts



Number of violations on Internet/Real shop



Number of Illegal products selling in Mall/ own site by Internet (number of cases)

	FY2014	FY2015	FY2016
Mall	45	38	120
own site	13	10	22

Violation cases found in Internet shopping

■ Number of violations on Internet sales (from January to December in 2016) : Total 142 cases

Electrical Appliances Safety Act(Denan): 115 cases(mall:101 cases and own site:10 cases)
Gas Business Act: 1 cases(own site: 1 case)
LPG Safety Act: 10 cases(mall:5 cases and own site:1 case)
Consumer Product Safety Act: 16 cases (mall: 15 cases and own site: 1 case)

■ Violation by Product

- AC adaptor 25 cases
- Cartridge gas stove 5 cases
- Laser pointer 16 cases
- Fluorescent lamp 4 cases
- Lithium-ion battery 5 case
- Electric heating cabinet 4 cases
- Outdoor-type gas stove 3 cases

■ Contents of violation (Act for E.-Appliance)

*including overlap

- Conformity (Tech. Standard) 78 cases
- Labeling 24 cases
- Notification of Business 25 cases

■ Example of violation

● AC adaptor

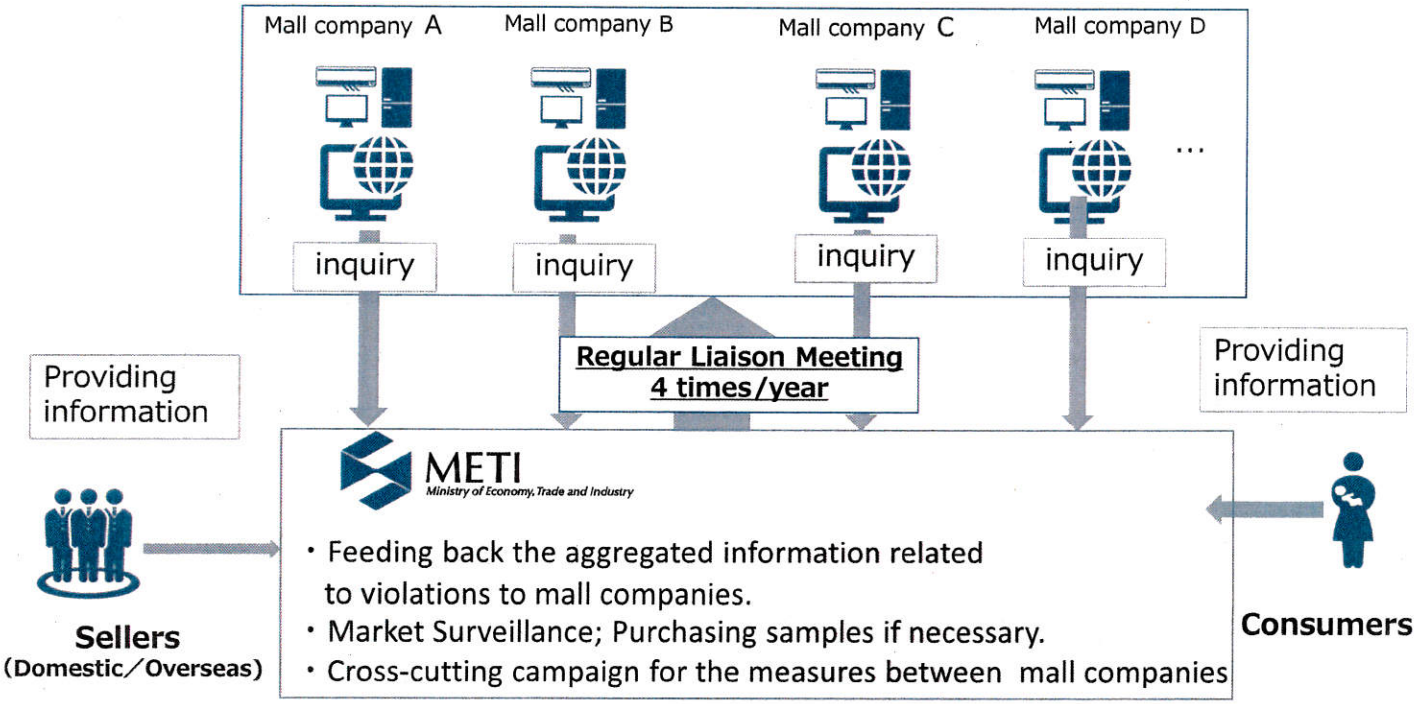
Products, insufficient insulation distance between different poles on a printed circuit board etc., being dangerous for ignition or electric shock.
Products that conduct and radiate noise through the power cord, etc. exceed the regulated capacity and then may affect the function of other equipment.

● Laser Pointer

Products with over 500 times the regulated capacity of output.

Future cooperation with internet mall providers

- Regarding products that violate the Product Safety Acts, we plan to collect information intensively from mall operators, sellers and consumers, and share it with mall companies (platform providers).



METI
Ministry of Economy, Trade and Industry

4. Fostering the Safety culture in industry

Product Safety (PS) Awards

- METI launched the Product Safety Awards program in FY 2007 with the aim of encouraging private enterprises to make a greater commitment for product safety and safety culture. The award winners are expected to be the PS mentors for the industry.
- In FY 2017, METI has been rolling out its award promotion campaign for 2017's theme "product safety in a straightforward manner".

FY 2017 winners

○ Large Manufacturer and Importer Category

METI Minister's Awards：YKK AP Inc.
DG for Industrial Safety Policy's Award：Hitachi Appliances, Inc.
Excellence Award (Committee Award): Laundry System & Vacuum Cleaner Business Division of Appliances Company, Panasonic Corp.
Excellence Award (Committee Award): FUJISASH CO.,LTD.
Excellence Award (Committee Award): WACOAL HOLDINGS CORP.

○Large Retailer Category

No winner

○Small & Medium Manufacturer & Importer Category

METI Minister's Awards：Accuphase Laboratory, Inc.
DG for Industrial Safety Policy's Award：Yamamoto Kogaku Co.,Ltd.

○Small & Medium Retailer Category

DG for Industrial Safety Policy's Award：Daiichi-Denkasha Co.,Ltd.
DG for Industrial Safety Policy's Award：Nara-Nikka Service Co.,Ltd.

○Special Awards

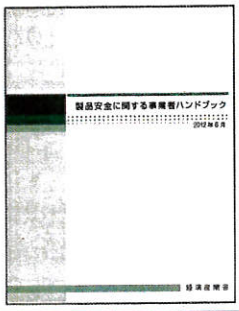
"Productive Consumer Affairs Policies" Net Chiba
Seven & i Holdings Co., Ltd.

Promotion of Industry's Product Quality Assurance/ Improvement Efforts

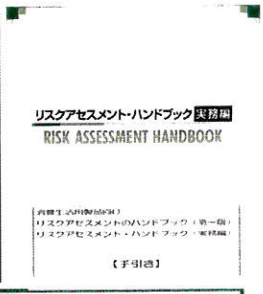
◆Corporate Guidelines on Product Safety

◆Product safety handbooks including recalls and risk assessment before/after product incidents

◆Award for good corporate practices on product safety



Product Safety Handbook for Business Operators



Risk Assessment Handbook

Since 2007, METI has been awarding good corporate practices in manufacturers/ retailers/etc.

In 2017, Minister Prize are awarded against 2 companies,
DG Prize 5 companies.

PS (Product Safety) Awards

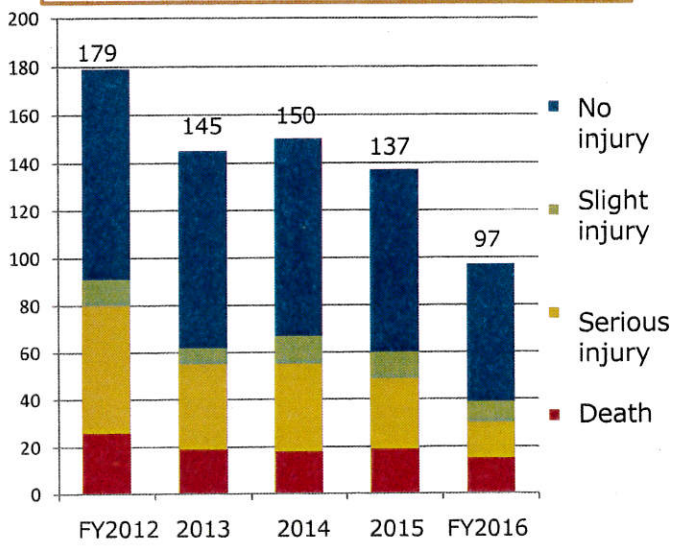
5. Trend of Elderly and Child accidents in Japan

16

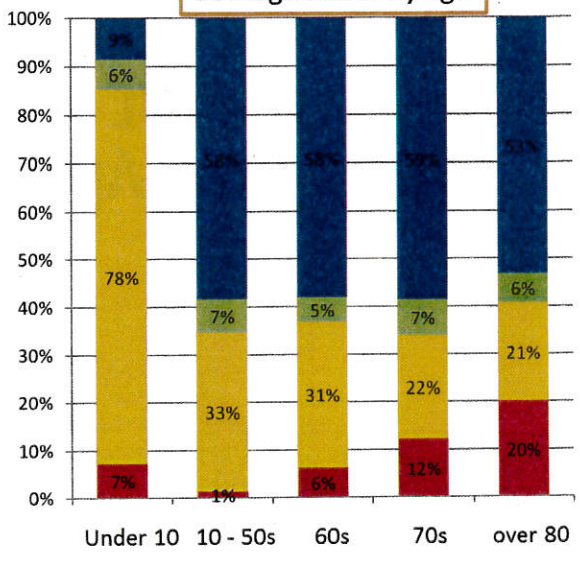
Accidents involving elderly people

- A total of 708 serious product accidents occurred in the elderly demographic (65 years old and over) in the past five years.
- The proportion of "death" caused by accidents increased for the elderly generation, the percentage of which rises with age; those over 80 are most at risk.

Serious product accidents for elderly people



Damage status by age

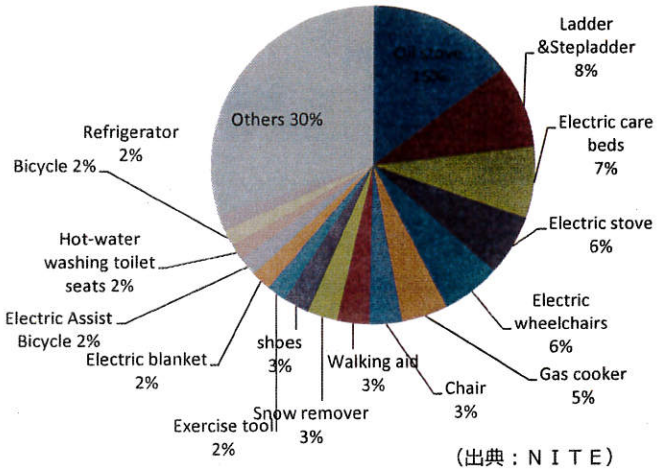


17

Accidents involving elderly people

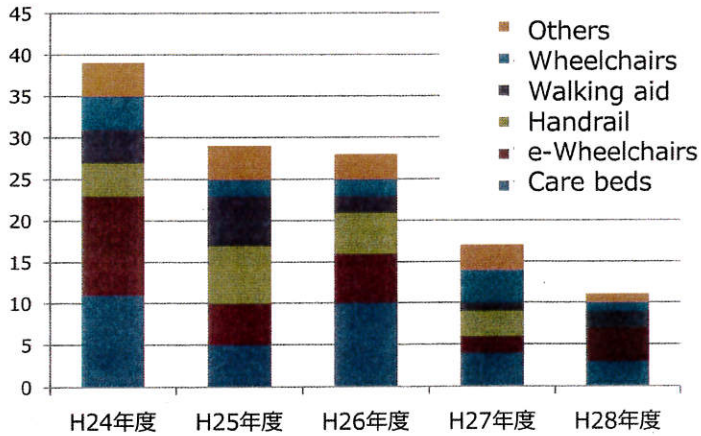
- Mostly caused by healthcare equipment, oil stoves, and stepladders.
- For welfare equipment, electric care beds and electric wheelchairs caused the most accidents.

Death and serious injury for Elderly (Age 65 and over) (FY2012 -FY 2016)



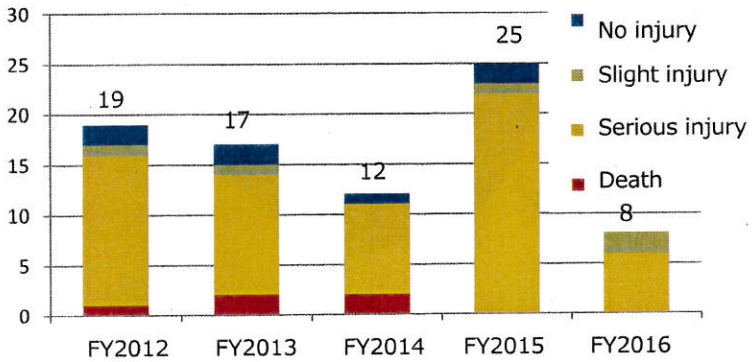
(出典：ＮＩＴＥ)

Product Accidents Caused by welfare equipment (including Non-Serious Accidents)

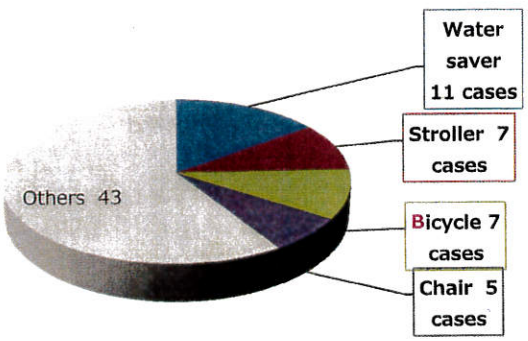


Accidents involving children (under 10 years)

Effects of serious accidents for children over the past 5 years



Number of cases of death / serious injury child accident by product (FY2013-2016)



A measure for Child Product Safety : "Kids Design" Award