

【NECグループ外秘事項】

Empowered by Innovation

**NEC**

**Our Pride,  
Our Products**



# TCO認証取得事例と各種認証について

2012年5月24日

NECディスプレイソリューションズ株式会社

品質・生産本部品質保証部

小谷 智

# NECディスプレイソリューションズ株式会社 概要

事業内容 : 映像表示装置および映像表示ソリューションの開発、製造、販売  
本社所在地 : 東京都港区三田一丁目4番28号(三田国際ビル)  
資本金 : 30億円(NEC、NECフィールドディング出資)  
従業員 : 約600名  
国内営業拠点 : 東京・名古屋・大阪  
スタッフ・開発拠点 : 神奈川県大井町(STC)

## STCからの富士山



### 企業理念

お客様に感動と満足をいただける  
クォリティの高い映像ソリューションを  
提供します

### ビジョン

ディスプレイ市場における  
世界のリーディングカンパニーを  
目指します



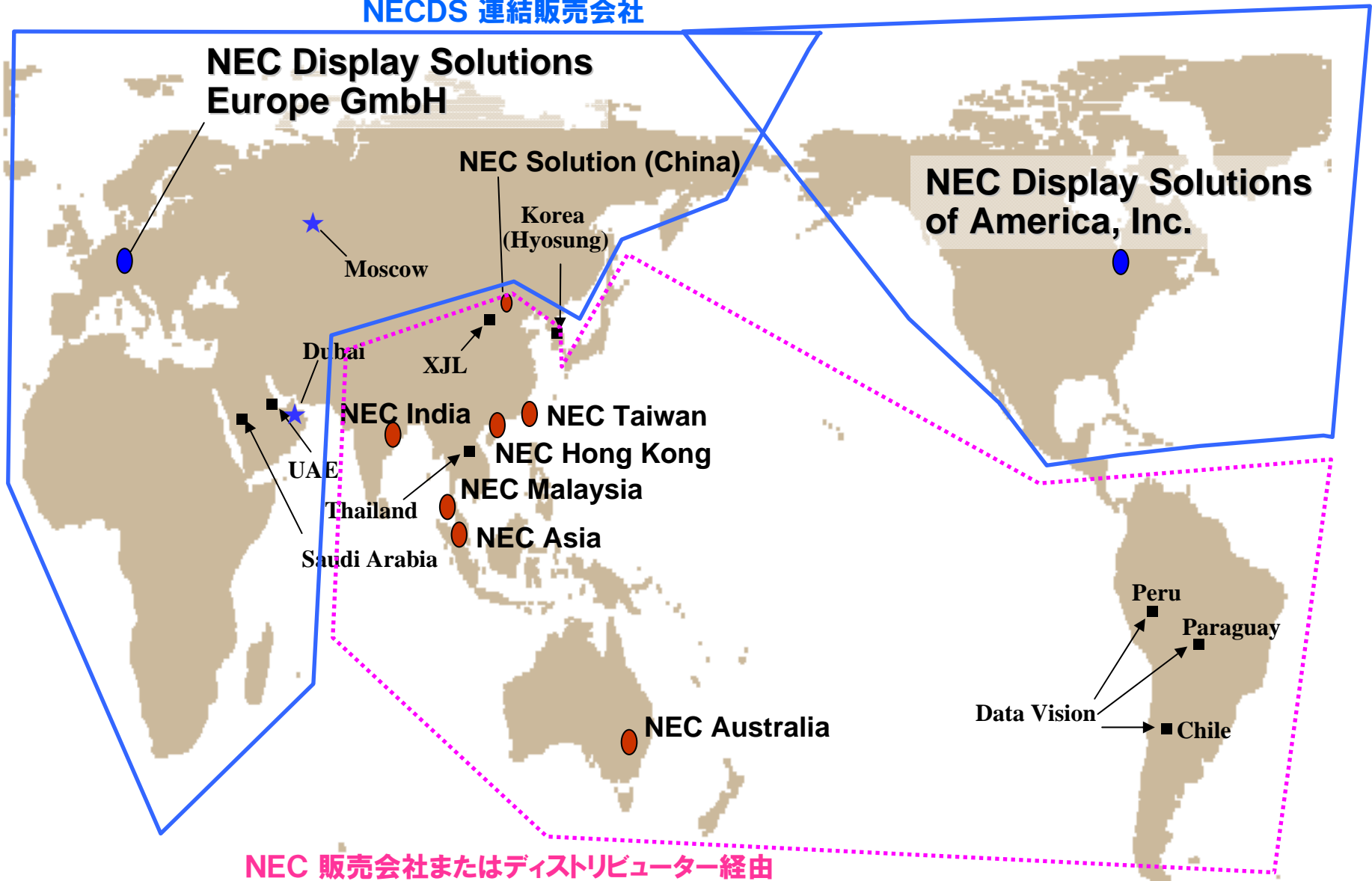
三田国際ビル



湘南テクニカルセンター (STC)

# 当社のグローバルネットワーク

NECDS 連結販売会社



# 当社の事業展開



# TCO認証とは

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## TCO認証

- スウェーデンの労働団体傘下のTCO Development社により運営されている  
第三者認証システム
  - ・ ISO14024 タイプ I 第三者認証による環境ラベル
- 人間工学に基づいて製造され、環境に負荷を与えないIT製品であることを  
認証する

## 歴史

- 1978年 VDT作業による首・肩のこり、眼精疲労などが問題化
- 1982年 VDT作業における規格の研究に着手 … MPR
- 1992年 人にも環境にも負担をかけないことを目的として、ディスプレイ機  
器を対象にTCO92として規格化し、認証を開始
- 時代と共に規格・カテゴリも変遷し、ディスプレイ機器では2009年にTCO  
Display 5をリリース。
  - ・ 現在、TCO Display 5.2。今年、TCO Display 6.0をリリースする
- プロジェクターは2009年に TCO Projector 1.0 をリリース
  - ・ 現在 TCO Projector 1.2

# Product Categories

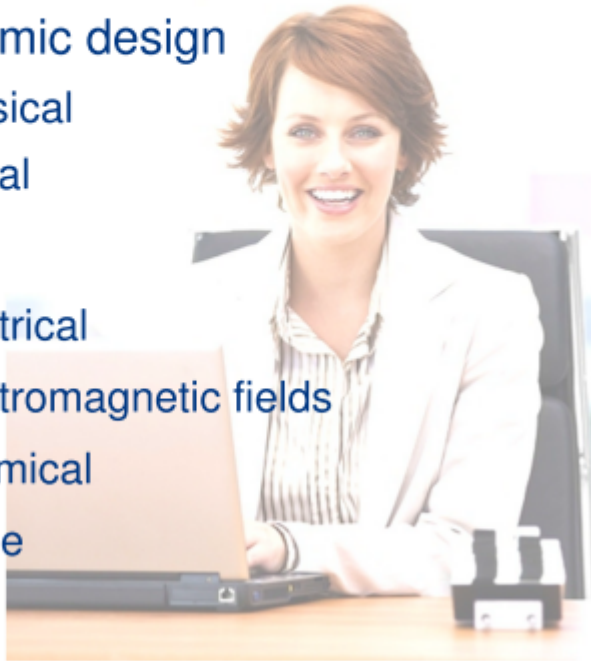


■ ディスプレイ 53社 853認証 3952機種  
■ プロジェクタ 3社 32認証 111機種

# TCO Certified products go beyond green

## Benefits for You

- ✓ High performance
  - Image and sound quality
- ✓ Ergonomic design
  - Physical
  - Visual
- ✓ Safety
  - Electrical
  - Electromagnetic fields
  - Chemical
  - Noise



## Benefits for the Planet

- ✓ Energy efficiency
- ✓ Minimal use of hazardous substances
- ✓ Designed for long life time and recycling
- ✓ Manufactured with management systems for environment.
- ✓ Brand owner demonstrates active CSR

# TCO認証の要求事項

## 認証の対象となる分野

- 人間工学(Ergonomics)
- 放射物(Emission)
- エコロジー(Ecology)
- エネルギー(Energy)
- CSR

## TCO認証の特徴

- 人間工学・放射物
  - コントラスト比、色調、画面の反射(グレア)、静電気、電界・磁界
  - ISO規格、GS規格等に対してTCO独自の基準を設けて、製品ごとに試験を行い、製品の適合性が確認される
- CSR … 2009年から新たに要求項目として加わった
  - 以下のいずれかを満足すること
    - GRI G3 Level C以上、UN Global Compact Initiative、EICCメンバー、SA8000認証
  - 現在、新たな要求事項を制定し、移行期間中。





# Meeting Multiple Needs

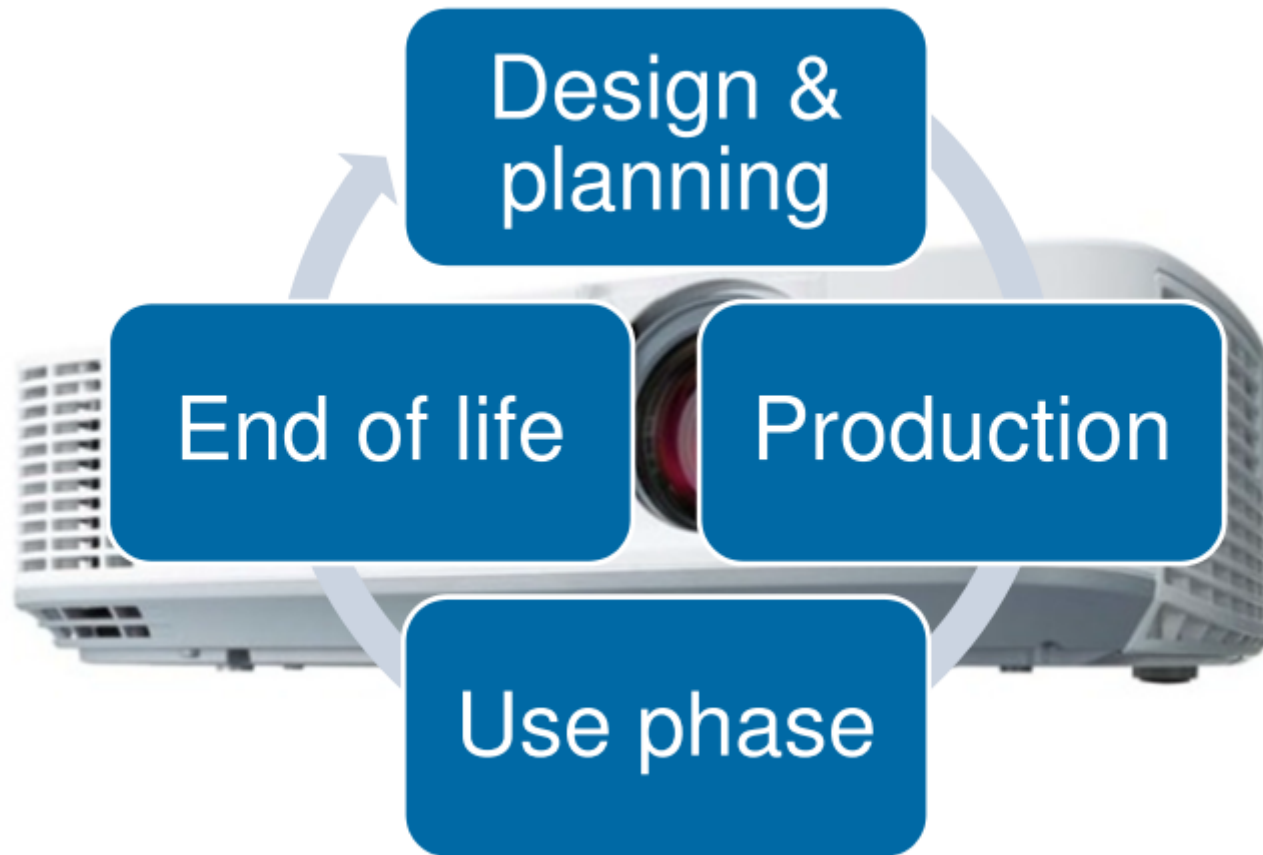
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- Multi-attribute label
  - Usability, Environment, Social Responsibility
- International certification for international products
- 3rd party certification – a type 1 label (ISO 14024)
- User focused
  - Certification criteria are developed together with users, manufacturers, test labs, scientists and other experts
  - User guides and advice



# Challenges in greening AV

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# TCO Display 5.0の要求事項

ENVIRONMENTAL FEATURES	CLARIFICATION
Limits on Hazardous Materials	RoHS compliance (including restrictions on heavy metals) Limits on hazardous flame retardants / plasticizers No bromine or chlorine in plastic
Climate / Energy	Current Energy Star standard
Environmental Management	ISO 14001 or EMAS
Social responsibility	Brand owner demonstrates corporate social responsibility
Product Lifetime	1 year brand owner product warranty Availability of spare parts
Packaging	Recyclable, no hazardous substances
Designed for Recycling	Coding of plastics, limited variety of plastics Easily dismantled mercury lamps
Product Take-back	Brand owner offers take-back options

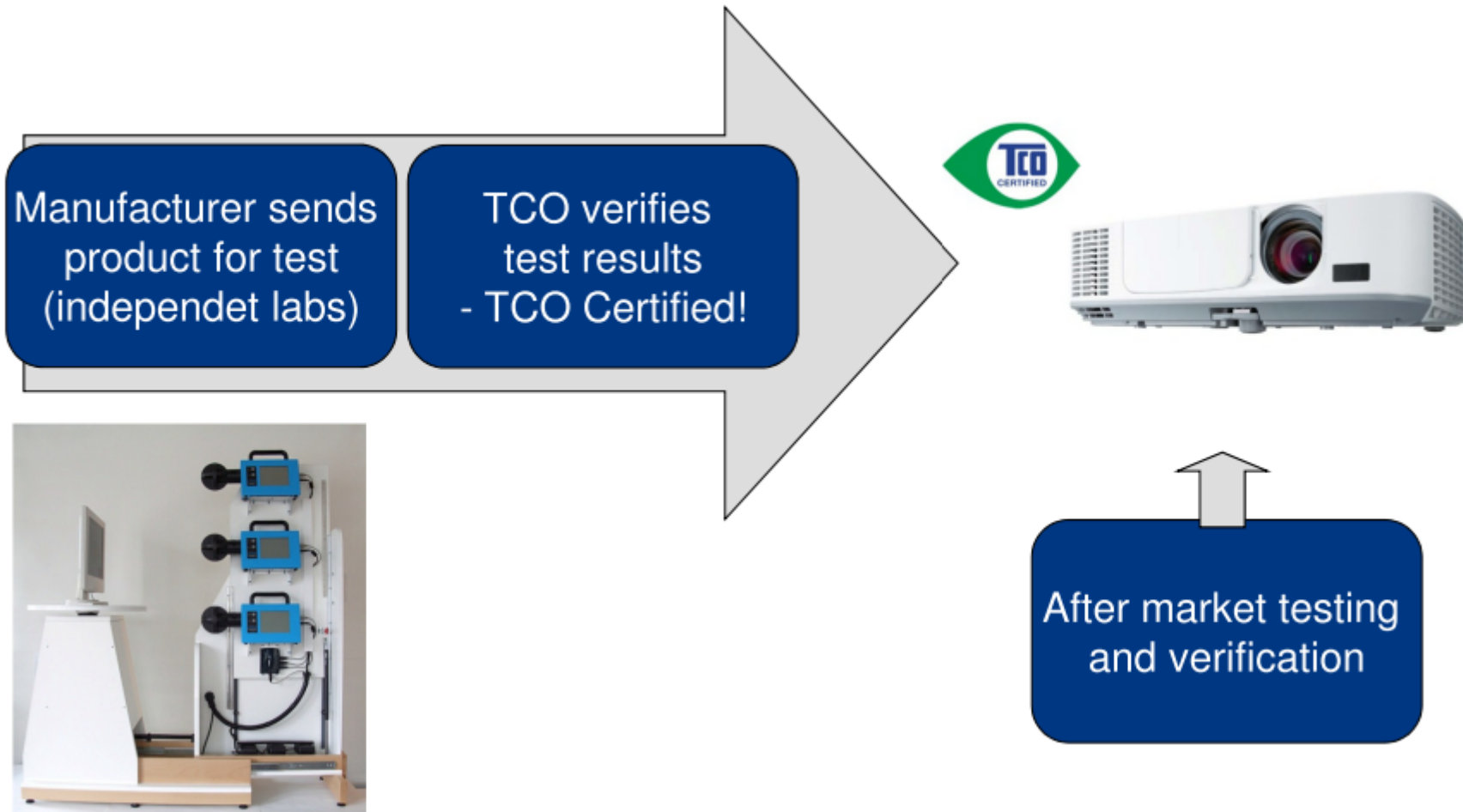
USABILITY FEATURES	CLARIFICATION
Light levels without color tint	No color tint introduced at lower light levels
Uniform color over the entire screen	No distortion of colors
Wide color gamut	Display can present wide range of color hues
Calibrated color temperature	The color temperature presented is true
Wide luminance level	Display adjustable for high and low ambient light
Uniform luminance	No darker or brighter spots on the screen
Black Levels	Presentation of true black even at high brightness
Wide Viewing Angle	Same good visual quality viewed off axis
Fast Response Time	Avoid motion blur in moving images
Calibrated gamma curve	Possible to distinguish between similar light levels
Display designed for adjustability	Vertical tilt, height adjustability
Reduced electric and magnetic fields	Low user exposure to electromagnetic fields
Low acoustic noise	For FPDs with fans or "all in one" computers

# TCO Projectorの要求事項

ENVIRONMENTAL FEATURES - throughout product life cycle	EXAMPLES
Production	<ul style="list-style-type: none"> <li>Environmental management system</li> <li>Brand owner demonstrates corporate social responsibility</li> <li>Limits on hazardous materials - for restrictions on heavy metals and flame retardants</li> <li>Packaging designed for recycling</li> </ul>
Usage	<ul style="list-style-type: none"> <li>Energy consumption – Current Energy Star compliant</li> <li>Product Lifetime – warranty and availability of spare parts</li> </ul>
End of Life	<ul style="list-style-type: none"> <li>Designed for recycling, take-back options</li> </ul>

USABILITY FEATURES	EXAMPLES
The <i>TCO Image Size</i> rating	Ensuring optimal image performance to match projected image size. Easy to choose a projector which suits existing screens or rooms
Calibrated color temperature	The correct color temperature provides true-to-life colors
Large color range	Accurate reproduction of a large number of colors
Even colors	No patches of abnormal coloration on the image
Even luminance	No patches of abnormal luminance on the image
High contrast and black level	Crucial for showing wide variety of detail in the image and dynamics in dark scenes
Low noise levels	Low noise relative to image size
Video and data inputs	Option to connect video and data sources
Low electric and electromagnetic fields	Users are exposed to low electrical and electromagnetic fields

# Independently tested and verified



# Sustainable IT – CSR Criteria



## ILO Core Conventions

Must follow ILO's 8 Core Conventions

29: Forced Labour Convention

87: Freedom of Association

98: Right to Organize and Collective Bargaining

100: Equal Remuneration

105: Abolition of Forced Labour

111: Discrimination (Employment and Occupation)

138: Minimum Age

182: Worst Forms of Child Labour

# CSR: How do manufacturers comply?

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## Declaration

- Declaration that the brand owner meets all requirements in TCO Certified

## Established practices and routines

- Continuous work towards CSR objectives through membership in EICC, an SA8000 certification or equivalent

## Ongoing verification and audits

- Identify production facilities where TCO Certified products are made and provide evidence of third party inspections in the past year.

## Credible audits

- An annual independent audit report for at least one production facility manufacturing TCO Certified products.

## Prepared for spot checks

- Be prepared that TCO Development and independent partners have the right to carry out spot checks on production facilities.

## Be open and available for dialog

- Ensure availability of an English-speaking person responsible for CSR activities is available for dialog with TCO Development.

## **CSR: Accredited third party verifies manufacturer compliance:**

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- Sign-off that all TCO Certified criteria are fulfilled.**
- Evidence of membership / certification according to EICC / SA8000**
- Manufacturer submits list of all final assembly plants (tier 1) where TCO Certified products are assembled and evidence of which of those plants have been independently audited during last 12 months.**
- Submit audit report for one of the identified production facilities. Ensure that CSR commitment is ongoing and conscientious.**
- Identified English-speaking representative responsible for CSR.**



# 当社の認証取得状況

## TCO認証

- ディスプレイはTCO発足当時の'92年から認証取得
- 現在の認証取得状況
  - ディスプレイ 39認証 129機種
    - TCO Display 5: 25認証 71機種、TCO'03 Display: 14認証 58機種
  - プロジェクタ 29認証 103機種

## その他の認証取得

- 安全規格(電波規格)
  - 電安法(日本)、CB(国際規格)、TUV(日本・欧州)、UL(日本、北米)、CCC(中国)、
  - KC(韓国)、PSB(シンガポール)、NOM(メキシコ)、IRAM(アルゼンチン)、SASO(サウジアラビア)、
  - Gost-R(ロシア)、BSMI(台湾) 他
- 電波規格
  - VCCI(日本)、FCC(米国)、C-Tick(豪州)、DoC/BESTS7(カナダ) 他
- エルゴノミクス
  - TUV-Ergonomics(ドイツ)、ISO9241-307、TCO(スウェーデン) 他
- 環境規格
  - エコマーク・J-Moss(日本)、EnergyStar(国際)、EPEAT(米国)、CECP・CEL(中国)、
  - Green Mark(台湾)、E-Standby(韓国)、GEEA(欧州)
- 欧州:CE・・・LVD, EMC, ErP, RoHS, WEEE, REACH 他 医用認証など・・・

# TCO認証書とTCO Document



## CERTIFICATE

No. P110100019

**Company:** NEC Display Solutions, Ltd.  
686-1, Nishioi, Oi-Machi,  
Ashigarakami-gun  
Kanagawa, 258-8533  
Japan

**Brand Name:** NEC

**Type/Model Name:** NP-M300X\*

**Product Category:** Projector

**Type key:** See appendix

**Sales Name:** See appendix

**Critical Component:** See appendix

**Comments:** Class I

This Certificate confirms that a sample of the Certified Product, as stated herein, has been tested and approved as to its compliance with the Criteria Document valid at the time of the Laboratory Test. The Certified Product may, subject to the use of the unique combination of Brand name, Type/Model Name and Sales Name as stated in this Certificate, be marketed and sold with the TCO Label in accordance with the Agreement.

**Certification date:** October 18, 2010  
**Date of issue:** October 18, 2010

Lars Waller  
Certification Process,  
TCO Development

## Congratulations!

**This product is designed for both you and the planet!**



The product you have just purchased carries the TCO Certified label. This ensures it is designed, manufactured and tested according to some of the strictest quality, environmental and social requirements in the world. This makes for a high performance product, designed with the user in focus that also minimizes the impact on the climate and our natural environment.

TCO Certified is a third party verified program, where every product model is tested by an accredited impartial test laboratory. TCO Certified represents one of the toughest certifications for ICT products worldwide.

### Some of the Usability features of TCO Certified Displays:

- Visual Ergonomics for image quality is tested to ensure top performance and reduce sight and strain problems. Important parameters are Resolution, Luminance, Contrast, Reflection and Colour characteristics
- Products are tested according to rigorous safety standards at impartial laboratories
- Electric and magnetic fields emissions as low as normal household background levels
- Workload ergonomics to ensure a good physical environment

### Some of the Environmental features of TCO Certified Displays:

- Production facilities have an Environmental Management System (EMAS or ISO 14001)
- Low energy consumption to minimize climate impact
- Restrictions on Chlorinated and Brominated flame retardants, plasticizers, plastics and heavy metals such as cadmium, mercury and lead (RoHS compliance)
- Both product and product packaging is prepared for recycling
- The brand owner offers take-back options

### Corporate Social Responsibility

The brand owner demonstrates the product is manufactured under working practices that promote good labour relations and working conditions.

The Criteria Document can be downloaded from our web site. The criteria included in this label have been developed by TCO Development in co-operation with scientists, experts, users as well as manufacturers all over the world. Since the end of the 1980s TCO has been involved in influencing the development of IT equipment in a more user and environmentally friendly direction. Our ICT product labeling system began in 1992 and is now requested by users and ICT-manufacturers all over the world.

For more information, please visit  
[www.tcodevelopment.com](http://www.tcodevelopment.com)

TCO Certified Document  
for Displays ver. 2.2



# 認証における課題

## ビジネスとしての認証システム

- 認証システムの乱立 … Third Party 認証機関の参画
  - DisplayにとってTCOは必須、Projectorにとっては任意
- 認証費用・試験費用の負担
  - 安全規格・電波規格は複数モデルをまとめて認証取得できる
  - 環境関係は性能別になるので、各モデル単独で取得しなくてはならない … 高額化

## 環境関係の基準の多様化

- 認証基準(Criteria)の流動性
  - TCOでは基準に対する調査、ヒアリングが実施される … ユーザー、製造者含む
    - 国際規格におけるエキスパートによる基準作成とは趣が異なる
- 環境関係は国際規格がなく、それぞれに規格を制定
  - 安全関係:IEC、電波関係:CISPR 他 ITU, ISOなどの国際規格
  - エコマーク、EnergyStar、CECP、Green Mark
    - 製品の特性を無視した基準も……

## 認証内容の認識

- TCOなどの総合的な認証は、その認証内容が理解されにくい
  - TCO… エルゴノミクス規格？ 環境規格？ 倫理性規格？

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