



Labelling Design Effort in India



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Energy Efficiency Standards and Labeling**

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Energy Efficiency: Policy Instruments



✍ Energy pricing & tariff structures

✍ Monetary & fiscal incentives



✍ Awareness, information & training

✍ Research & development

✍ Demonstration programs



✍ Procurement policies

✍ Labeling & minimum efficiency standards



Standards & Labeling (S&L) Programs



✍ S&L is increasingly being used as important policy instrument

✍ More than two dozen countries have well established S&L programs

✍ More than 44 products covered

✍ Combination of mandatory and voluntary; endorsement and comparison; labeling alone, standards alone, or combination

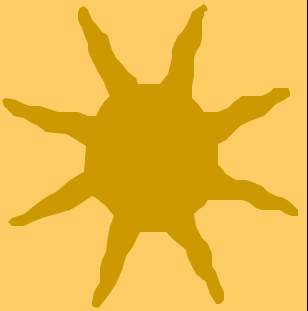
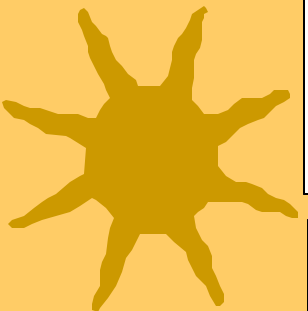
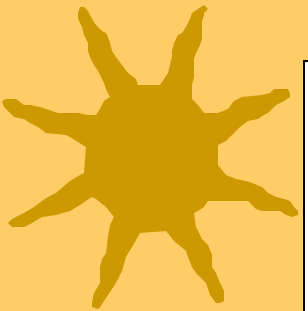
✍ Are programs working?

– Generally yes - excellent results

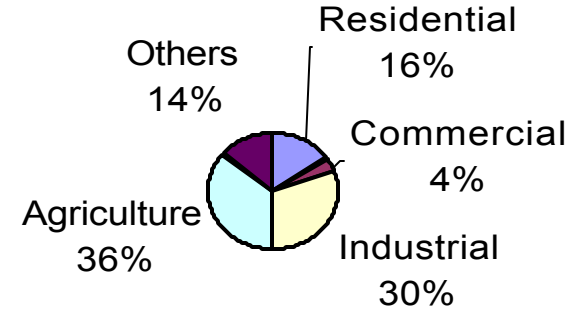




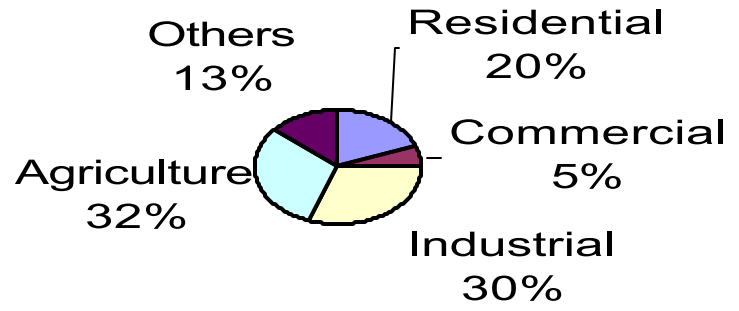
Indian Context: Need For Higher energy Efficiency



Share of Different Sectors in Total Electricity Consumption in 1992-93



Share of Different Sectors in Total Electricity Consumption in 1999-00





Indian Context: Need For Higher energy Efficiency




| Sector | Demand growth between 1992-93 & 1999-00 |
|--------------|---|
| Residential | 9.5 per cent per annum |
| Commercial | 9.7 per cent per annum |
| Industrial | 5.2 per cent per annum |
| Agricultural | 6.5 per cent per annum |
| Total | 6.6 per cent per annum |




Indian Context: Government Response to Need For Higher energy Efficiency



 **FIRST STEP – Scoping study prepared “Status Report on Appliances (1995-96)”**



 **Assistance sought from USAID in the labeling area under the USAID assisted bi-lateral co-operation “EMCAT” project (1997)**





Labeling –Focus of Assistance under EMCAT



-
- ✍ Energy Labeling: What is involved?
 - Which products to be labeled?
 - What type of label (comparison or endorsement)?
 - Decisions about label
 - Design
 - Technical basis
 - Decision about program related activities
 - Monitoring, compliance, evaluation
 - Revision
 - ✍ Focus of assistance under EMCAT
 - Label design



USAID EMCAT Project Research Group



USAID India Mission

- Mr. Sandeep Tandon



International Resources Group (IRG)

- Mr. Mark Tribble
- Mr. Vijay M. Deshpande
- Ms. Linda Dethman (Lead Researcher and Consultant to IRG)



Indian Market Research Firm

- Taylor-Nelson-Sofres-Mode (Ms. Indira Unninayar)



Label Design Under USAID EMCAT Project: Basic Approach



 **Listen to consumers and stakeholders**



 **Reflect needs and wants**



 **Develop labels accordingly**



Label Design: Phase 1 (Dec. 1997 – February 1998)

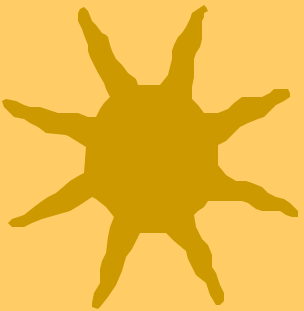


A survey of Indian consumers' views on appliance efficiency and labeling



 Sample size:

- **1833 refrigerator owning households (ownership = 25 % of urban households)**
- **1067 water heater owning households (ownership = 11 % of urban households)**
- **389 air-conditioner owning households (ownership = 1 % of urban households)**



 Six Indian cities (Delhi, Mumbai, Chennai, Bangalore, Ahmedabad, Kolkatta)

 Interviews with main income earners and housewives



Label Design: Phase 1 (Dec. 1997 – February 1998)



Purpose

- **Understand consumer appliance choice-criteria and role of energy efficiency among these**
- **Understand appliance buying/decision making process**
- **Pre-test the concept of efficiency-grading labels**



Findings

- **Energy efficiency not one of the important factors considered during purchase (brand name, price, cooling or heating capacity, compressor brand are more important)**





Label Design: Phase 1 (Dec. 1997 – February 1998)

Findings

- Energy efficiency rated as important, when prompted
- Both, men and women are involved in decision making
- 80% of the consumers stated that labels would be extremely useful
- Most consumers correctly understood that labels showed relative energy efficiency





Label Design: Phase 1 (Dec. 1997 – February 1998)



Conclusions

- **Label concept well received, so label development continued**
- **Label design needed to appeal to both, men and women**



Next question

- **Label – yes, but how should it look?
Which design?**





Label Design: Phase 2 (April – May 1998)



Focus Group Discussions

Purpose

- Identify basic label design(s) that consumers find understandable, appealing & persuasive

Methodology

- Successful label formats elsewhere (Australian-star, EU-bars, North American-sliding scale, Thailand-numbers) used to develop initial set of 11 different labels





Label Design: Phase 2 (April – May 1998)



Methodology

- **Initial 11 designs pre-tested, revisions carried out: final set of 17 labels developed**
- **10 focus groups (segregated by sex, 5 male, 5 female)**
- **3 Indian cities (Delhi – 4, Mumbai – 2, Chennai – 2)**
- **8-10 participants per group**
- **Trained facilitator, free-flowing discussions, local language**
- **Focus on basic label format & label elements (rating scale, color combination, symbols, manner of depiction of comparison)**
- **Constructing own label – group exercise**





Label Design: Phase 2 (April – May 1998)



Findings

- ✍ Basic label format preferences
 - Australian star and North American sliding scale
- ✍ Consumer preferences
 - The word “power” preferred to word “energy”
 - “Savings” preferred to “efficiency”
 - Endorsement “based on standard Indian government tests” preferred
 - Fist holding currency found attractive
 - Hand cupping the sun found appealing
 - Hand holding the bolt found attractive
 - Yellow color preferred





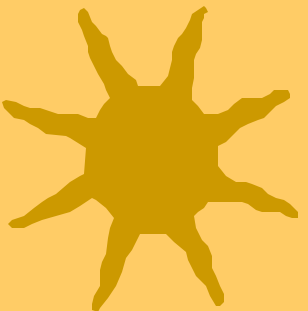
Label Design: Phase 2 (April – May 1998)



Findings

Consumer dislikes

- **Inverted red triangle - reminds of family planning symbol**
- **Triangular and circular shapes not preferred**
- **Pot of money – found old fashioned**
- **Light bulb not preferred**
- **EU-bar scale found confusing**



Based on standard Indian Government tests

ENERGY GUIDE

Capacity :

Product :

Compare the Energy use of this Product with Others Before you Buy

This appliance uses
442 Units per day



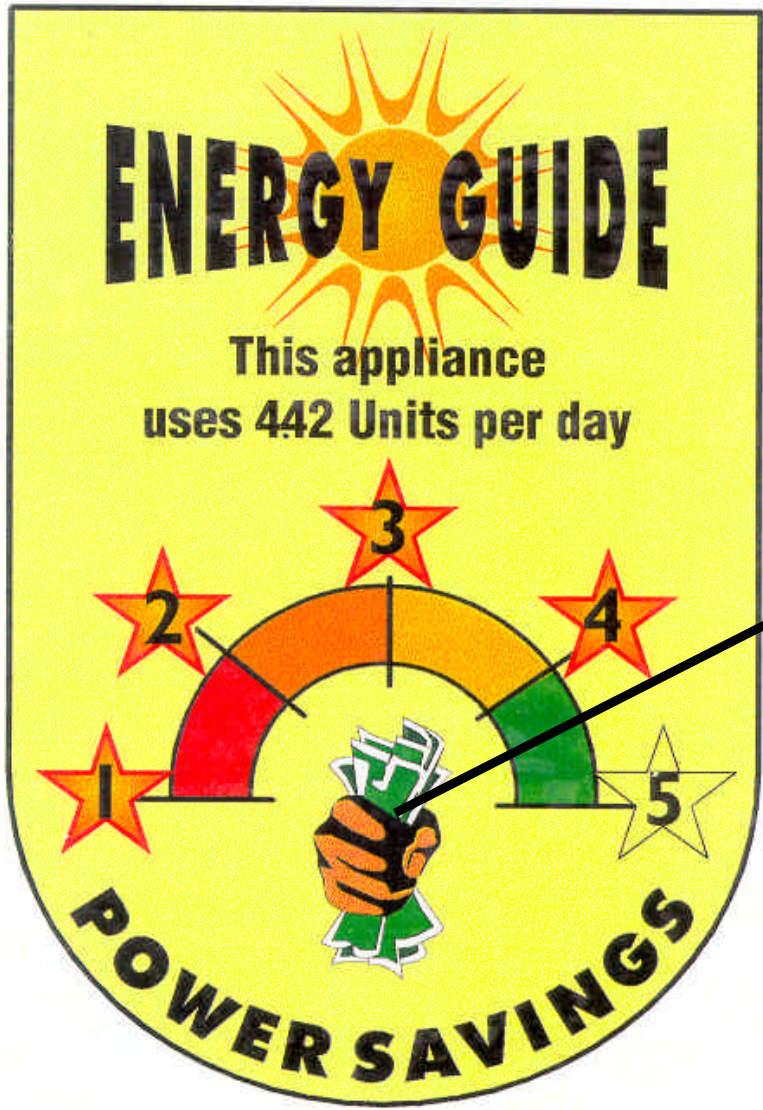
This model's estimated yearly operating cost is: **Rs.342**



POWER SAVINGS

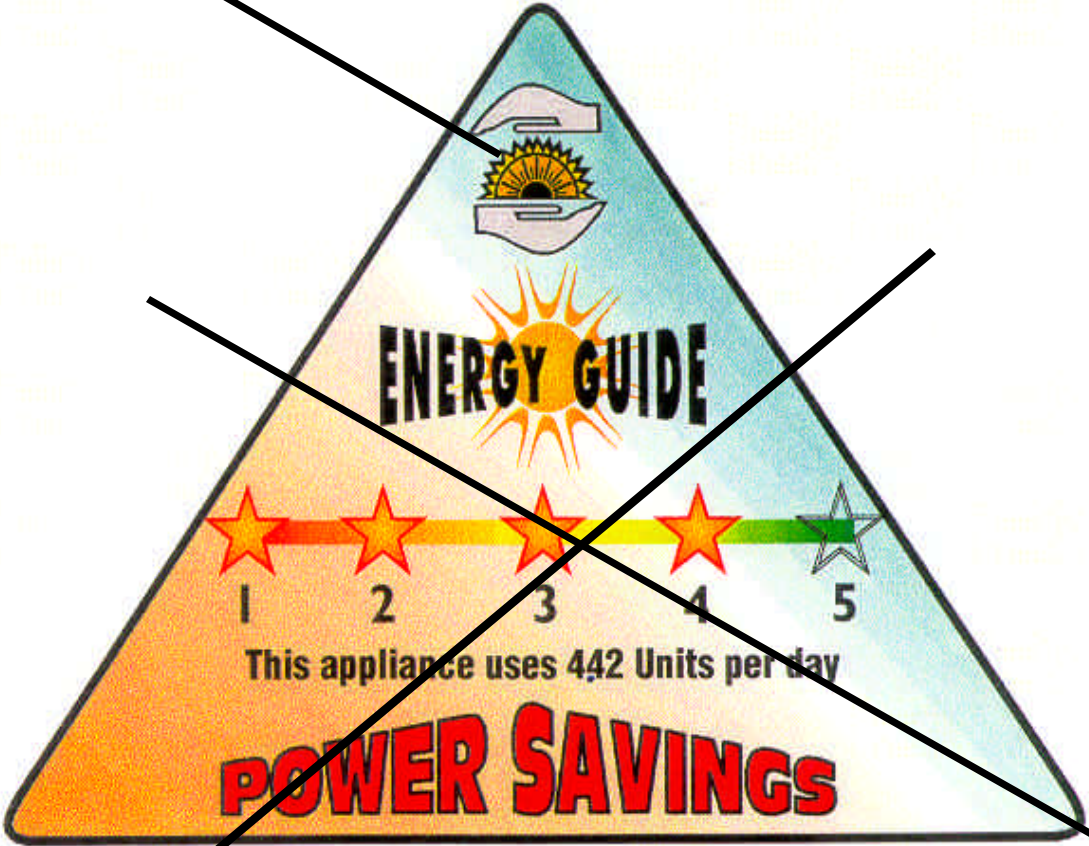
Endorsement
Preferred

Did not
like
inverted
triangle



**Found
Attractive**

Found Appealing



**Found
Appealing**



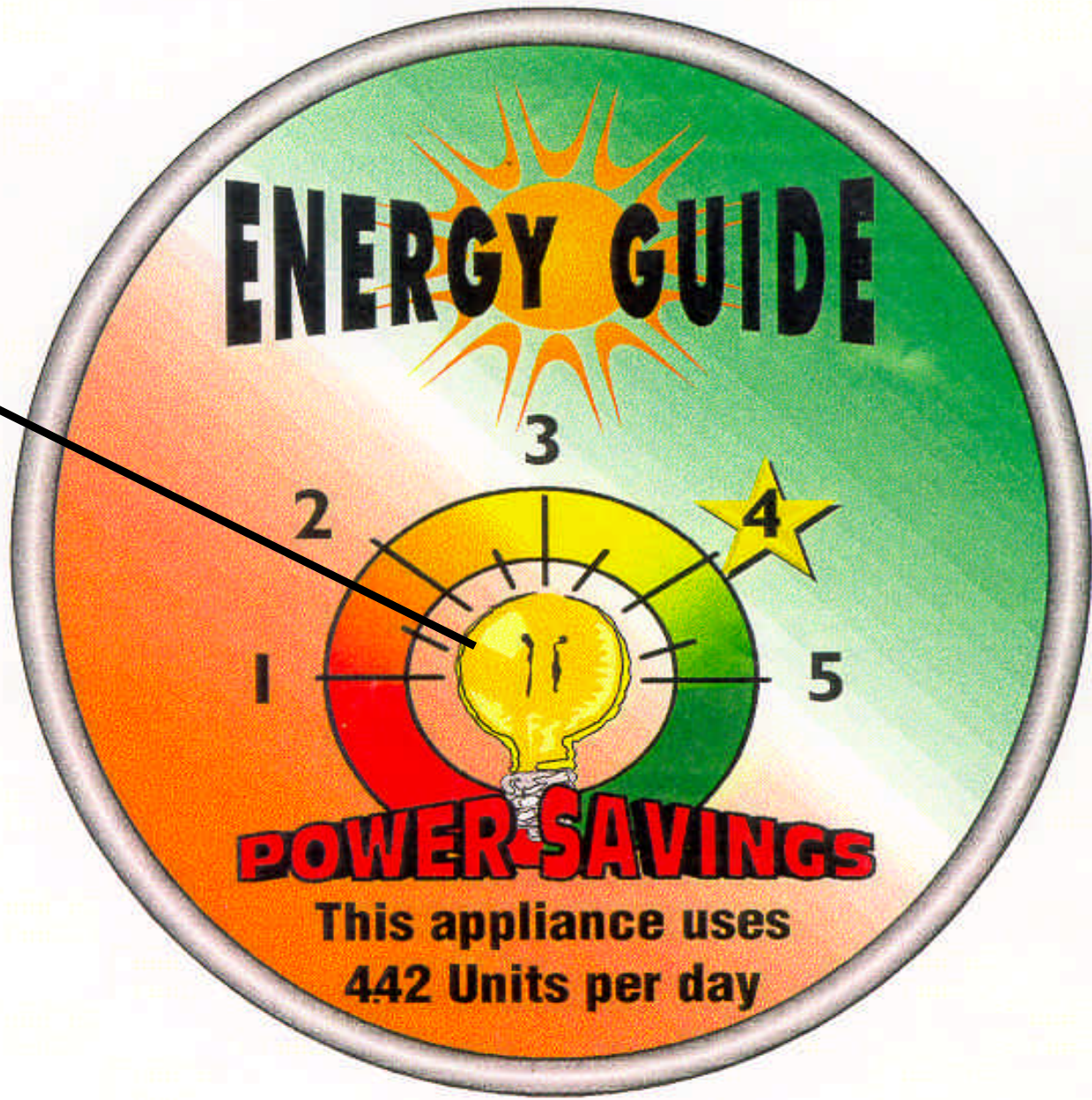
**This
appliance uses
442 Units per day**

ENERGY GUIDE

POWER SAVINGS

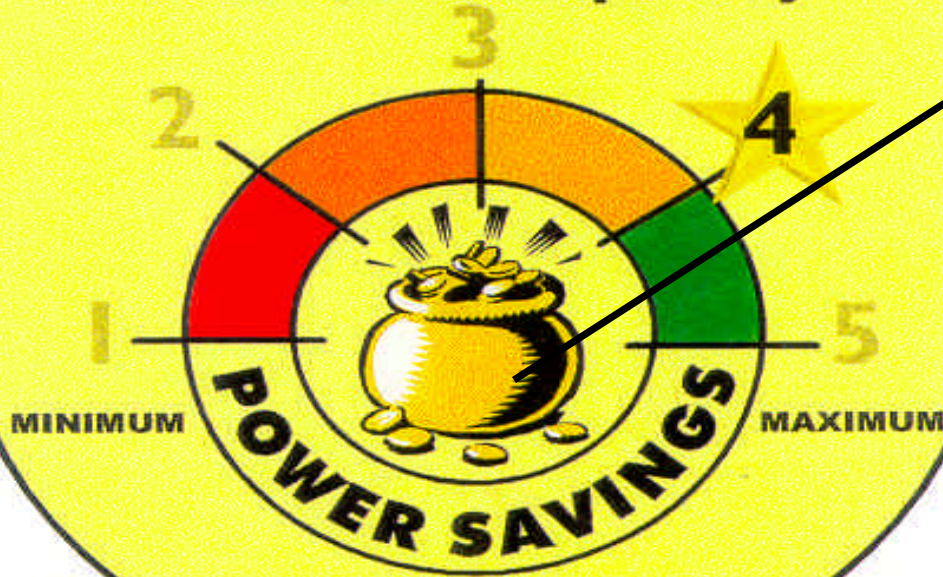


Not Liked



ENERGY GUIDE

This appliance
uses 442 Units per day



Not
Liked



Label Design: Phase 2 (April – May 1998)



- ✍️ **Conclusions: basic format and elements**
- **Australian stars & North-American sliding scale**
 - **Hand-cupping sun**
 - **Fist holding currency**
 - **Hand holding lightning bolt**
 - **Replacement of inverted red triangle by arrow**



- ✍️ **4 label designs incorporating the above formats and elements developed for further consumer and stake-holder research to arrive at “A preferred design”**



POWER SAVINGS GUIDE

1 2 3 4 5
MORE STARS
MORE SAVINGS

Power Consumption
1.05
Units per day

Appliance: Refrigerator
Brand :
Model :
Type : Single Door Manual Defrost
Size : 165 litres

*Under test conditions when tested in accordance with IS 1476: 1979
Actual power consumption will depend on how you use the appliance*

Label 1

POWER SAVINGS GUIDE

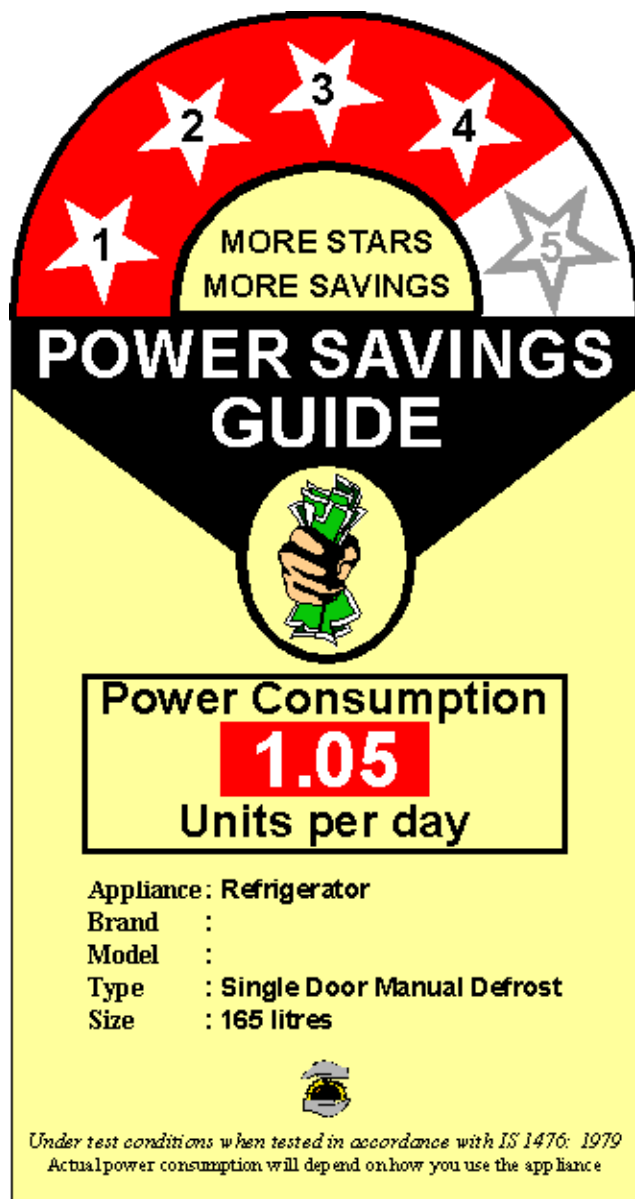
1 2 3 4 5
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Power Consumption
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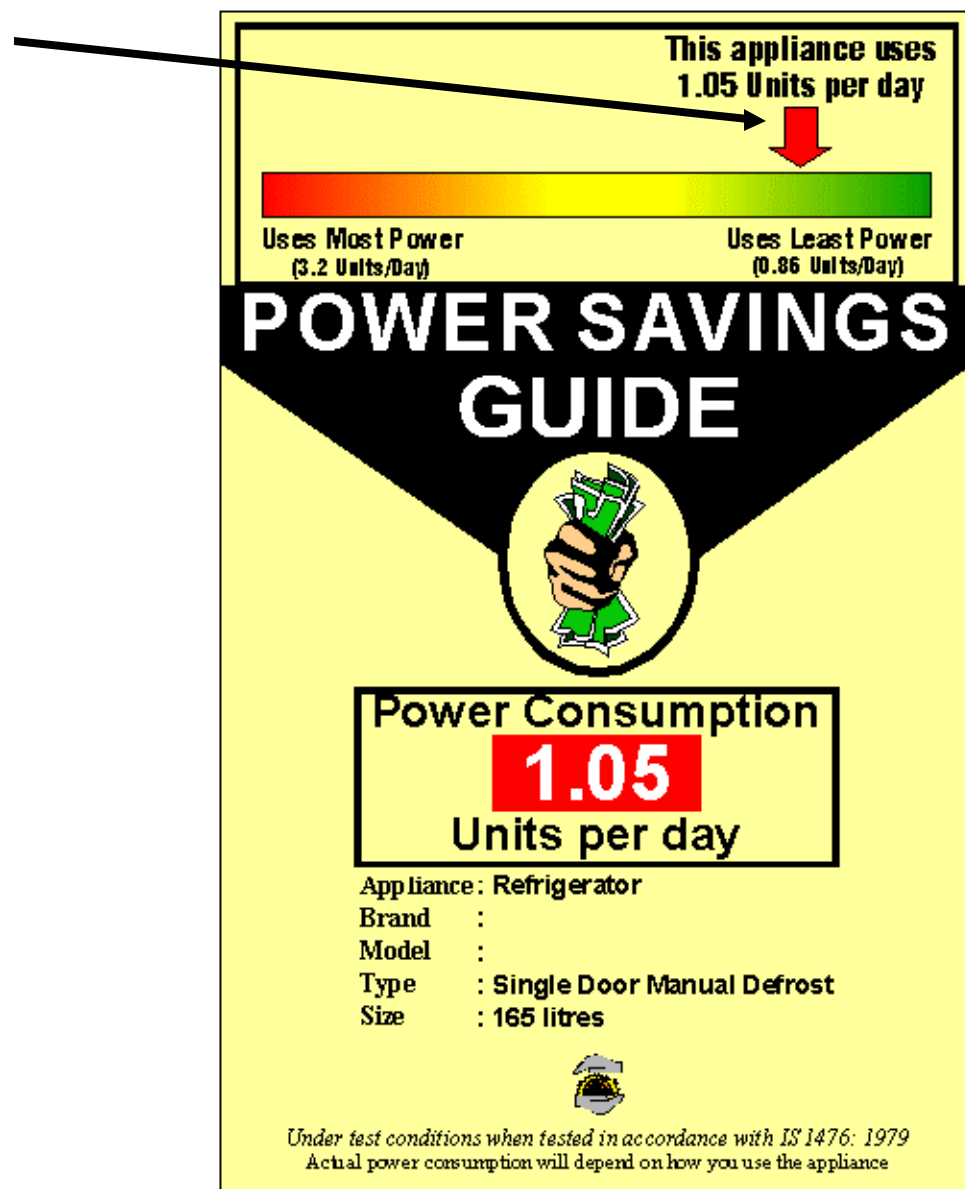
Appliance: Refrigerator
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Actual power consumption will depend on how you use the appliance*

Label 2



Label 3



Label 4



Label Design: Phase 3 (February –March 1999)



Final (phase 3) research

Purpose

- **Arrive at final label design**



Steps in phase 3 research

- **Expert group (stakeholder) review of four label designs emerging out of phase 2 research**
- **Revise label designs based on expert group feed-back**
- **Subject the revised label designs to consumer opinion under simulated buying situation**





Label Design: Phase 3 (February – March 1999)



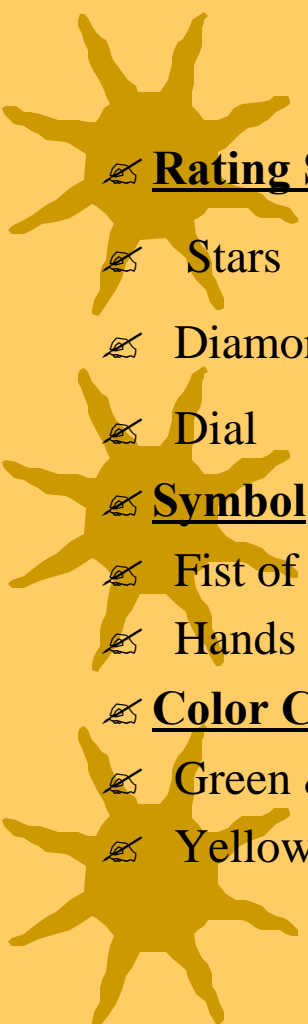
Expert group (stakeholder) recommendations

- ✍ **Modify color to an “enviro-cueing” green & blue rather than yellow and harsh black**
- ✍ **Not to use “lighting bolt” - seen too aggressive**
- ✍ **Keep back-up option to stars for efficiency may be confused with ISO refrigerator freezer rating**
- ✍ **Use GOI symbol of hand cupping the sun; do away with fist of currency**
- ✍ **Dial was appreciated as a “complete scale” with clear minima and maxima specified**





Revisions of Labels Post Expert Review



Label 1

Label 2

Label 3

Label 4

Rating Scale

Stars



Diamonds

Dial

Symbol

Fist of Currency



Hands with Sun



Color Combination

Green & Blue



Yellow & Black



1 MORE STARS
MORE SAVINGS

POWER SAVINGS GUIDE

Power Consumption
2.9
Units per day

Appliance: Refrigerator
Brand :
Model :
Type : Single Door Manual Defrost
Size : 165 litres

*Under test conditions when tested in accordance with IS 1476: 1979
 Actual power consumption will depend on how you use the appliance*

1 2 3 4 5 MORE STARS
MORE SAVINGS

POWER SAVINGS GUIDE

Power Consumption
1.05
Units per day

Appliance: Refrigerator
Brand :
Model :
Type : Single Door Manual Defrost
Size : 165 litres

*Under test conditions when tested in accordance with IS 1476: 1979
 Actual power consumption will depend on how you use the appliance*

1 MORE STARS
MORE SAVINGS

POWER SAVINGS GUIDE

Power Consumption
2.9
Units per day

Appliance: Refrigerator
Brand :
Model :
Type : Single Door Manual Defrost
Size : 165 litres

*Under test conditions when tested in accordance with IS 1476: 1979
 Actual power consumption will depend on how you use the appliance*

3 MORE STARS
MORE SAVINGS

POWER SAVINGS GUIDE

Power Consumption
1.05
Units per day

Appliance: Refrigerator
Brand :
Model :
Type : Single Door Manual Defrost
Size : 165 litres

*Under test conditions when tested in accordance with IS 1476: 1979
 Actual power consumption will depend on how you use the appliance*

1 2 3 4 5

**MORE DIAMONDS
MORE SAVINGS**

POWER SAVINGS GUIDE

Power Consumption
2.9
Units per day

Appliance: Refrigerator
Brand :
Model :
Type : Single Door Manual Defrost
Size : 165 litres

*Under test conditions when tested in accordance with IS 1476: 1979
 Actual power consumption will depend on how you use the appliance*

1 2 3 4 5

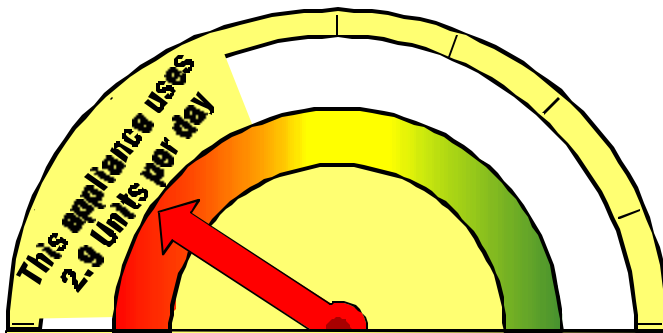
**MORE DIAMONDS
MORE SAVINGS**

POWER SAVINGS GUIDE

Power Consumption
1.05
Units per day

Appliance: Refrigerator
Brand :
Model :
Type : Single Door Manual Defrost
Size : 165 litres

*Under test conditions when tested in accordance with IS 1476: 1979
 Actual power consumption will depend on how you use the appliance*



Uses Most Power
(3.2 Units per day)

Uses Least Power
(0.86 Units per day)

POWER SAVINGS GUIDE



Power Consumption

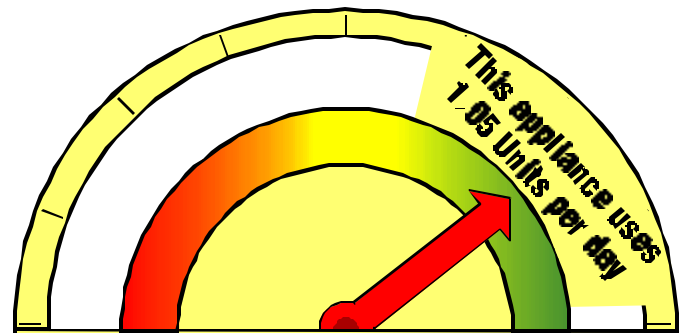
2.9

Units per day

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Label Design: Phase 3 - Survey Design

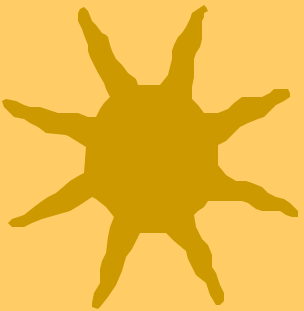


✍ Quantitative survey with close and open ended questions



✍ Simulated real life situation

- **Research carried out by putting labels on refrigerators**
- **To remove bias, refrigerators used, at all centres, all same size, color, size, brand/company, type and model**
- **Monadic design - one respondent exposed to only one type of label = four labels, four groups of respondents**





Label Design: Phase 3 - Survey Design



Target group

- **Owners of refrigerators**
- **Socio-economic categories 'A' & 'B'**



Coverage

- **Delhi**
- **Mumbai**
- **Chennai**
- **Bangalore**
- **673 respondents, 160-165 per group/label**









Label Design: Phase 3 - Survey Findings



Noticeable elements

-  **The power consumption of ‘X’ units per day**
-  **The term ‘power savings guide’**
-  **The specifications**
-  **The term ‘more stars/diamonds more savings’ in labels 1, 2, and 3**









Label Design: Phase 3 - Survey Findings



Appeal



-  **All highly appealing (scores of over 4 on 5 point scale)**
-  **Color-combination in label 1 liked most (green & blue)**
-  **All three rating scales equally liked**
-  **‘Fist with currency/hand cupping sun’ equally liked**









Label Design: Phase 3 - Survey Findings



Comprehension

-  All four labels fairly well comprehended
-  Rating scale with 'stars' and 'diamonds' had better comprehension than 'dial'
-  Comprehension of 'fist with currency' is more focused
-  Negligible confusion of 'stars' with star rating of freezers







Label Design: Phase 3 - Survey Findings



Persuasive Ability

 **All four labels equally and highly persuasive**



 **More than 95% said they would rather go for refrigerator with label rather than one without a label**





Label Design: Phase 3 - Summary & Conclusion



 **All four labels perform very well and almost equally so in terms of persuasiveness and appeal**



 **Green & blue color combination preferred over yellow & black**



 **‘Stars and diamonds’ better understood than dial**

 **‘Fist of currency’ clearer in its communication of savings**




Label Design: Phase 3 - Recommendations



 **Label 1 : stars + fist with currency
+green & blue color (star rating scale
easier to communicate)**



 **Consumer education through an
information campaign a must before
introduction of labeling (consumers
appeared to grasp the full meaning of
the label gradually as the interview
progressed)**



1 MORE STARS MORE SAVINGS

POWER SAVINGS GUIDE

Power Consumption
2.9
Units per day

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2 3 4 5 MORE STARS MORE SAVINGS

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Lessons Learned



 **Focus on consumer research**



 **Adoption of a phased approach**




 **Cooperation with stakeholders**



Focus on Consumer Research



 **Governments aim to bring energy efficiency as an important criteria in consumer purchase decision process (awareness, information, promotion, incentives, tariffs)**



 **Need to provide consumers with quick and reliable information about the relative energy efficiency of various appliances in an easily understandable manner**



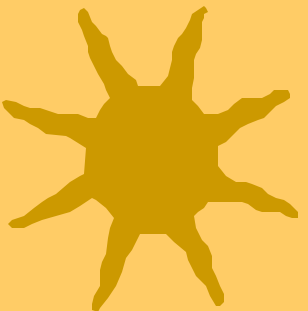
 **Label is an instrument or means to provide this information**



Focus on Consumer Research



✍ **Consumers need to use labels: they will do so if they understand labels**



✍ **Consumer research has a major role here as it provides insight in to consumer likes, needs, understanding and perceptions and helps in designing an attractive, comprehensible and motivating label that has a better chance of being used by consumers**





Focus on Consumer Research



Many significant consumer findings:

- ✍ **“Power” and not “energy”**
- ✍ **Inverse relationship (more stars less power) to be avoided**
- ✍ **“Units” and not “kWh”**
- ✍ **“More stars-more savings” and not “more stars-more efficiency”**
- ✍ **Modify color to an “enviro-cueing” green & blue rather than yellow and harsh black**
- ✍ **Not to use “lighting bolt” - seen too aggressive**
- ✍ **Keep back-up option to stars – possible confusion with ISO refrigerator freezer rating**





Focus on Consumer Research



Many significant consumer findings


- Endorsement of govt. Of India (“based on Indian government tests”)
- Did not like light bulb
- Did not find pot of money appealing
- Found fist holding currency notes appealing
- Found the symbol of sun cupped in two hands appealing





Adoption of a Phased Approach



 **Phased approach helped to systematically develop a label design which stakeholders can accept, and which consumers find appealing, motivating and comprehensible**



Adoption of a Phased Approach




 **Phase 1 : Do consumers need/want label?**



 **Phase 2 : What basic label format and design elements do consumers prefer?**




 **Phase 3 : Which “particular” label format and which “particular” combination of design elements and label format do stakeholders and consumers prefer?**



Cooperation With Stakeholders



 **Cooperation with stakeholders (policy makers, national standards body, manufacturers, industry associations, retailers/distributors of appliances, consumer groups, non-governmental organizations, testing facility owners) helped to prove the value of consumer research to stakeholders and policy makers**



Cooperation With Stakeholders



✍ Whether voluntary OR mandatory, stakeholders have the ultimate authority/power to accept or reject the research



✍ Stakeholder “buy-in” therefore is very essential

✍ During the labeling design work under USAID’s EMCAT project, conscious efforts were made to constantly interact with relevant stakeholders



✍ This resulted in stakeholder “buy-in” and adoption of label design by policy makers & national standards body.



Cooperation With Stake-Holders: Some Examples



✍ Labeling workshop in January 1998 where results of phase 1 research were shared with stake-holders (policy makers, manufacturers, standards body, retailers, researchers, testing centres, consumer organizations)



✍ Live filming of focus group discussions for stake-holders (April-may 1998)




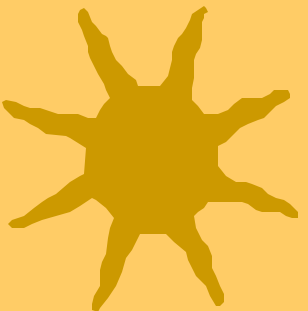
✍ Labeling workshop with apex level manufacturers body (confederation of Indian industry-CII) in September 1998 to share focus group (phase 2) findings



Cooperation With Stake-Holders: Some Examples



 **Formation of CII sponsored working group on energy labeling having policy makers and standards body as members (October 1998)**



 **Interactive training sessions for policy makers and standards body (October 1998, November 1999)**



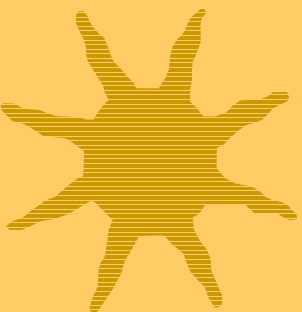
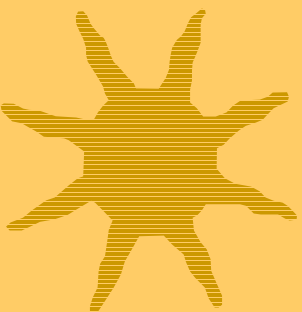
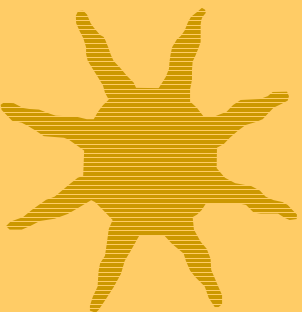
 **Sharing of phase 3 research results with policy makers, standards body and CII sponsored working group through formal presentations (July-August 1999)**

 **Presentation of labeling research findings in CII and consumer organization organized seminars and events in different parts of the country (June to December 1999)**



Conclusions

- ✍ **Extensive consumer research is essential in the development of a good label design.**
- ✍ **Phased approach helps in the development of a better label design as it enhances the reliability and confidence of the consumer research results.**
- ✍ **Co-operation with stakeholders is essential to get their:**
 - **Support to conduct consumer research**
 - **buy-in OR endorsement of the label design emerging out of consumer research**



Thank You