



Government of Kerala

Abstract

Local Self Government Department - Subsidy Norms for Renewable Energy Devices to be followed by Local Governments [as part of](#) Total Energy Security Mission - Approved - Orders Issued:-

LOCAL SELF GOVERNMENT (DA) DEPARTMENT

G.O.(MS) No. 221/2008/LSGD

Dated, Thiruvananthapuram, 7th August 2008

Read: G.O.(Rt.) No. 1775/08/LSGD Dt. 23-06-2007

ORDER

As per the GO read above, Government constituted an Expert Committee to suggest the norms for various devices and systems in the non-conventional energy sector for the plans implemented by Local Governments as part of Total Energy Security Mission. The State Level Coordination Committee on Decentralisation at its meeting held on 25-07-2008 considered the recommendations of the Expert Committee and finalized the norms.

Government are pleased to approve the subsidy norms for renewable energy devices to be followed by Local Governments [as part of](#) Total Energy Security Mission as appended to this order.

By order of the Governor

S.M.Vijayanand
Principal Secretary

To

1. All Presidents/Secretaries of Village Panchayats
2. All Presidents/Secretaries of Block Panchayats
3. All Presidents/Secretaries of District Panchayats
4. All Mayors/Secretaries of Corporations
5. All Chairpersons/Secretaries of Municipalities
6. All Chairpersons of District Planning Committees
7. All District Collectors & Member Secretaries, District Planning Committees

8. The Member Secretary, State Planning Board
9. The Chairman, Kerala State Pollution Control Board
10. The Member Secretary, Kerala State Pollution Control Board
11. The Director of Panchayats
12. The Director of Urban Affairs
13. The Commissioner of Rural Development
14. The Director of Public Relations
15. The Director, Clean Kerala Mission
16. The Chief Town Planner
17. The Director, Kerala Institute of Local Administration, Thrissur
18. The Director, State Institute of Rural Development, Kottarakkara
19. The Director, ANERT, Thiruvananthapuram
20. The State Technical Director, TESM, ANERT, Thiruvananthapuram
21. The Executive Director, Kudumbashree
22. The Executive Chairman & Director, Information Kerala Mission
23. All District Planning Officers
24. All Deputy Directors of Panchayats
25. All Assistant Development Commissioners (General)
26. The Director, Local Fund Audit, Thiruvananthapuram
27. State Performance Audit Officer
28. General Secretary, Kerala Grama Panchayat Association
29. Secretary, Kerala Block Panchayat Association
30. Secretary, Chamber of Municipal Chairpersons
31. Secretary Chamber of District Panchayat Presidents
32. The Principal Accountant General (Audit), Kerala, Thiruvananthapuram (With C/L)

Copt to:

1. The Private Secretary to the Minister for Local Self Government
2. The PA to Principal Secretary, Local Self Government Department
3. Local Self Government(DB/DC/DD/FM) Departments
4. Stock File/Office copy

Approved for Issue

Section Officer

**SUBSIDY NORMS FOR RENEWABLE
ENERGY DEVICES TO BE FOLLOWED
BY
LOCAL GOVERNMENTS**

(Appendix to G.O. (MS) No. 221/2008/LSGD dt.07-08-2008)

1. FIXED CHULHA MODELS FOR DOMESTIC PURPOSES

1.1 Introduction

Under the improved Chulha Programme, ANERT had been propagating Parishad 1+1, and 2+1 chulha models. These models have established thermal efficiencies of 20-25%. Acceptance of these models have come down primarily because of aesthetic and finish considerations. It is proposed to provide wide ranging finish options ranging from ordinary mud finish to terracotta, ceramic tile and steel finish. It has been observed that imitations of Parishad 1+1 and Parishad 2+1 with superior finishes have altered dimensions which seriously affect thermal efficiencies. Control of dimensions is therefore fixed as a major intervention point to ensure complete field level functionality. New Self Employed Workers identified through CDS shall be trained and positioned for installations. Existing SEWs would be thoroughly screened and be also inducted if necessary. Thus the subsidy programme apart from environment and cost of energy benefits would have an additional benefit of gainful local employment.

A campaign for fixed chulha installation is to be launched in September by TESM linking Banks, Community Development Society(CDS) network and improved chulha Self Employed Workers(SEW). The chulhas are sought to be installed through ward level camps organised in local self governments who want to avail subsidy. Material procurement shall be through banks and CDS. Wire cut bricks, AC pipes, gratings, terracotta liners etc. shall be through banks if possible. Otherwise procurement shall be through CDS network or the procurement mechanism for NREGS. Sand, tiles, clay, rice husk shall be through CDS net work. Insurance coverage shall be attempted. 10 % of the installations shall be verified by third party agencies for functionality, use and performance.

1.2 Estimated Cost

| S.No | Item Code | Description | Estimated Materials | Estimated Cost including corpus fund |
|------|-----------|---|--|--------------------------------------|
| 1 | IC110 | Improved wood burning fixed chulha model Parishad- one plus one, with terracotta liners , reducer, grating, baffle, junction box and chimney; using Wire cut bricks and ordinary finish | Wire cut bricks 25, terracotta liners 1 set, gratings (6"X 6") 1 set, CI plate (6" X 12"X1/2") 1 no, junction box, AC pipe 10"X 4",10 kg cement, 10 kg mud, clay and rice husk | Rs 1000 |

| S.No | Item Code | Description | Estimated Materials | Estimated Cost including corpus fund |
|------|-----------|---|--|--------------------------------------|
| 2 | IC11T | Improved wood burning fixed chulha model Parishad- one plus one, with terracotta liners , reducer, grating, baffle, junction box and chimney; using wire cut bricks and terracotta finish | Wire cut bricks 25, terracotta liners 1 set, gratings (6"X 6") 1 set, CI plate (6" X 12"X1/2") 1 no, junction box, AC pipe 10'X 4",10 kg cement, 10 kg mud, , clay and rice husk,1 sq.m terracotta tiles for finishing | Rs 1500 |
| 3 | IC11C | Improved wood burning fixed chulha model Parishad- one plus one, with terracotta liners , reducer, grating, baffle, junction box and chimney; using wire cut bricks and ceramic finish | Wire cut bricks 25, terracotta liners 1 set gratings (6"X 6"), 1 set CI plate (6" X 12"X1/2") ,1 no, junction box, AC pipe 10'X 4",10 kg cement, 10 kg mud, , clay and rice husk,1 sq.m ceramic tiles for finishing | Rs 1800 |
| 4 | IC11S | Improved wood burning fixed chulha model Parishad- one plus one, with terracotta liners , reducer, grating, baffle, junction box and chimney using wire cut bricks and steel liner finish | Wire cut bricks 25, terracotta liners 1 set gratings (6"X 6"), 1 set CI plate (6" X 12"X1/2") ,1 no, junction box, AC pipe 10'X 4",10 kg cement, 10 kg mud, , clay and rice husk, 1sqm steel liner for finishing | Rs 2100 |
| 5 | IC210 | Improved wood burning fixed chulha model Parishad- two plus one, with terracotta liners, reducer, grating, baffle, junction box and chimney using wire cut bricks and ordinary finish | Wire cut bricks 40, terracotta liners 1 set, gratings (6"X 6") 2 set, CI plate (6" X 12"X1/2") 2 no, junction box, AC pipe 10'X 4",15 kg cement, 15 kg mud, clay and rice husk | Rs 1200 |

| S.No | Item Code | Description | Estimated Materials | Estimated Cost including corpus fund |
|------|-----------|---|--|--------------------------------------|
| 6 | IC21T | Improved wood burning fixed chulha model Parishad- two plus one, with terracotta liners, reducer, grating, baffle, junction box and chimney using wire cut bricks and terracotta finish | Wire cut bricks 25, terracotta liners 1 set, gratings (6"X 6") 2 set, CI plate (6" X 12"X1/2") 2 no, junction box, AC pipe 10'X 4", 15 kg cement, 15 kg mud, clay and rice husk, 1.5 Sq.m terracotta tiles for finishing | Rs 1700 |
| 7 | IC21C | Improved wood burning fixed chulha model Parishad- two plus one, with terracotta liners , reducer, grating, baffle, junction box and chimney using wire cut bricks and ceramic finish | Wire cut bricks 25, terracotta liners 1 set, gratings (6"X 6") 2 set, CI plate (6" X 12"X1/2") 2 no, junction box, AC pipe 10'X 4", 15 kg cement, 15 kg mud, clay and rice husk, 1.5 Sq.m ceramic tiles for finishing | Rs 2000 |
| 8 | IC21S | Improved wood burning fixed chulha model Parishad- two plus one, with terracotta liners , reducer, grating, baffle, junction box and chimney using wire cut bricks and steel liner finish | Wire cut bricks 25, terracotta liners 1 set, gratings (6"X 6") 2 set, CI plate (6" X 12"X1/2") 2 no, junction box, AC pipe 10'X 4", 15 kg cement, 15 kg mud, clay and rice husk, 1.5 Sq.m steel liner for finishing | Rs 2300 |

1.3 Subsidy Norms

| S.No | ITEM CODE | Estimated Cost | Subsidy Particulars | | |
|------|-----------|----------------|--|--|---|
| | | | General (BPL) | SC (BPL) | ST (BPL) |
| 1 | IC110 | Rs 1000 | <p>60% subsidy for material cost including transportation cost released through banks/CDS network subject to a limit of Rs 330.</p> <p>Rs 300 as SEW wages from local self governments to TESM certified SEWs on production of a digital photograph of the installation attested by a gazetted officer or functionary of TESM.</p> | <p>80 % subsidy for material cost of base model released through bank/CDS network subject to a limit of Rs 440.</p> <p>Rs 300 as SEW wages from local self governments to TESM certified SEWs on production of a digital photograph of the installation along with a proforma on the installation attested by a gazetted officer or functionary of TESM.</p> <p>Rs 150 paid from local government against actual work out turn of beneficiary, as wages.</p> | <p>100 % subsidy for material cost including transportation cost released through banks /CDS network subject to a limit of Rs 550.</p> <p>Rs 300 as SEW wages from local self governments to TESM certified SEWs on production of a digital photograph of the installation along with a proforma on the installation attested by a gazetted officer or functionary of TESM.</p> <p>Rs 150 paid from local government against actual work out turn of beneficiary, as wages.</p> |
| 2 | IC11T | Rs 1500 | <p>60% subsidy for material cost including transportation cost released through banks /CDS network subject to a limit of Rs 330.</p> <p>Rs 300 as SEW wages from local self governments to</p> | <p>80 % subsidy for material cost including transportation cost released through banks /CDS network subject to a limit of Rs 440.</p> <p>Rs 300 as SEW wages from local self governments to TESM certified SEWs on production of</p> | <p>100 % subsidy for material cost including transportation cost released through banks /CDS network subject to a limit of Rs 550.</p> <p>Rs 300 as SEW wages from local self governments to TESM certified SEWs on</p> |

| S.No | ITEM CODE | Estimated Cost | Subsidy Particulars | | |
|------|-----------|----------------|--|---|--|
| | | | General (BPL) | SC (BPL) | ST (BPL) |
| | | | TESM certified SEWs on production of a digital photograph of the installation along with a proforma on the installation attested by a gazetted officer or functionary of TESM. | a digital photograph of the installation along with a proforma on the installation attested by a gazetted officer or functionary of TESM. Rs 150 paid from local government against actual work out turn of beneficiary, as wages. | production of a digital photograph of the installation along with a proforma on the installation attested by a gazetted officer or functionary of TESM. Rs 150 paid from Panchayat against actual work out turn of beneficiary, as wages. |
| 3 | IC11C | Rs 1800 | As above | As above | As above |
| 4 | IC11S | Rs 2100 | As above | As above | As above |
| 5 | IC210 | Rs 1200 | 60% subsidy for material cost including transportation cost released through banks /CDS network subject to a limit of Rs 300. Rs 300 as SEW wages from local self governments to TESSM certified SEWs on production of a digital photograph of the installation along with a proforma on the installation attested by a gazetted officer or functionary of TESM. | 80 % subsidy for material cost including transportation cost released through banks /CDS network subject to a limit of Rs 600. Rs 300 as SEW wages from local self governments to TESSM certified SEWs on production of a digital photograph of the installation along with a proforma on the installation attested by a gazetted officer or functionary of TESM. Rs 150 paid from Panchayat against actual work out turn of beneficiary, as wages. | 100 % subsidy for material cost including transportation cost released through banks /CDS network subject to a limit of Rs 700. Rs 300 as SEW wages from local self governments to TESSM certified SEWs on production of a digital photograph of the installation along with a proforma on the installation attested by a gazetted officer or functionary of TESM. Rs 150 paid from Panchayat against actual work out turn |

| S.No | ITEM CODE | Estimated Cost | Subsidy Particulars | | |
|------|-----------|----------------|--|--|---|
| | | | General (BPL) | SC (BPL) | ST (BPL) |
| | | | | | of beneficiary, as wages. |
| 6 | IC21T | Rs 1700 | 60% subsidy for material cost including transportation cost released through banks /CDS network subject to a limit of Rs 500.Rs 300 as SEW wages from local self governments to TESM certified SEWs on production of a digital photograph of the installation along with a proforma on the installation attested by a gazetted officer or functionary of TESM. | 80 % subsidy for material cost including transportation cost released through banks /CDS network subject to a limit of Rs 600. Rs 300 as SEW wages from local self governments to TESM certified SEWs on production of a digital photograph of the installation along with a proforma on the installation attested by a gazetted officer or functionary of TESM. Rs 150 paid from Panchayat against actual work out turn of beneficiary, as wages. | 100 % subsidy for material cost including transportation cost released through banks /CDS network subject to a limit of Rs 700. Rs 300 as SEW wages from local self governments to TESM certified SEWs on production of a digital photograph of the installation along with a proforma on the installation attested by a gazetted officer or functionary of TESM. Rs 150 paid from Panchayat against actual work out turn of beneficiary, as wages. |
| 7 | IC21C | Rs 2000 | As above. | As above. | As above. |
| 8 | IC21S | Rs 2300 | As above. | As above. | As above. |

2. PORTABLE CHULHA MODELS FOR DOMESTIC PURPOSES

2.1 Introduction

A variety of improved chulha models in the portable stove segment have come up in India recently. Most of them are Thomas Reed's model or equivalent micro gasifier stoves with thermal efficiencies in the range 25-35 %. They have excellent indoor air pollution performance as well.

1. SHELL foundation promoting IISc model.
2. British petroleum hybrid biomass stove.
3. Phillips wood stove.
4. TERI invert down draft gasifier
5. Envirofit INDIA (Private) Ltd

are to cite a few. TESS has invited an Expression of Interest (EOI) for selecting suitable models for dissemination in Kerala. Single pot or two pot models are sought to be selected. A Subsidy package proposed based on these models of stoves shall be routed through TESS, based on prior orders to accredited vendors. Provision for electronic transaction on portal shall be also attempted. It is proposed to distribute the stoves through block level energy marts and through Community Development Society (CDS) network. Wherever required, pelletised or briquetted biomass distribution shall also be entrusted with this network. Maintenance cost shall be built into the product cost. The annual maintenance cost shall cover only repair and not replacement.

2.2 Estimated Cost

| S.No | Item Code | Description | Estimated Cost |
|------|-----------|--|----------------|
| 1 | IC1POF | Improved wood burning gasifier type portable chulha model for one pot ordinary finish | Rs 1250 |
| 2 | IC1PEF | Improved wood burning gasifier type portable chulha model for one pot extra finish | Rs 2500 |
| 3 | IC2POF | Improved wood burning gasifier type portable chulha model for two pots ordinary finish | Rs 2500 |
| 4 | IC2PLF | Improved wood burning gasifier type portable chulha model for two pots extra finish | Rs 5000 |

2.3 Subsidy Norms

| Sl. No | Item Code | Estimated Cost | Subsidy Particulars | | | |
|--------|-----------|----------------|---|--|--|--|
| | | | All Categories (APL) | General (BPL) | SC (BPL) | ST (BPL) |
| 1 | IC1POF | Rs 1250 | 25% subsidy on base price limited to Rs 312.5 | 60% subsidy on price base limited to Rs 750 | 60% subsidy on base price limited to Rs 750 | 60% subsidy on base price limited to Rs 750 |
| 2 | IC1PLF | Rs 2500 | 25% subsidy on base price limited to Rs 312.5 | As above | As above | As above |
| 3 | IC2POF | Rs 2500 | 25% subsidy on base price limited to Rs 312.5 | 60% subsidy on base price limited to Rs 1500 | 60% subsidy on base price limited to Rs 1500 | 60% subsidy on base price limited to Rs 1500 |
| 4 | IC2PLF | Rs 5000 | 25% subsidy on base price limited to Rs 312.5 | As above | As above | As above |

3. COMMUNITY CHULHA MODELS FOR DOMESTIC, COMMERCIAL AND INSTITUTIONAL PURPOSES

3.1 Introduction

Integrated Rural Technology Centre (IRTC) model community chulhas are being disseminated within the state for last several years. Field level thermal efficiencies are in the range of 35-40%. Altering of dimensions in the field by SEWs is reported to affect thermal efficiencies seriously. A new set of SEWs are being identified and a mechanism of quality control put in place to ensure better field performance. This would ensure that the subsidy programme apart from environmental and cost of energy gains would have an additional benefit of gainful local employment. A campaign for fixed chulha installation is to be launched in September by TISM linking Banks, Community Development Society(CDS) network and improved chulha Self Employed Workers(SEW). The chulhas are sought to be installed through ward level camps organised in local self governments who want to avail subsidy. Material procurement shall be through banks and CDS. Wire cut bricks, AC pipes, gratings, ceramic liners etc. shall be through banks if possible. Otherwise procurement shall be through CDS network or the procurement mechanism for NREGS. Sand, tiles, clay, rice husk shall be through CDS net work. 10 % of the cost of the devices shall be set apart as corpus fund for maintenance support and quality control. Annual Maintenance Contract(AMC) shall be worked out availing the corpus fund through SEWs certified at the state level. AMC shall cover preventive maintenance and repair charges. Material replacement shall be extra. Insurance coverage shall be also attempted. 10 % of the installations shall be verified by third party agencies for functionality, use and performance.

3.2 Estimated Cost

| S.No | Item Code | Description | Estimated Materials | Estimated Cost |
|------|-----------|---|--|----------------|
| 1 | ICCA | Improved wood burning Community chulha model IRTC, Dia 25 cm-40 cm, with wire cut brick liners, grating, baffle, junction box and chimney with cowl | Wire cut bricks 100,1 set CI gratings (22.5" X 22.5"), 1 set CI plate (22.5" X 22.5"X 3/4"), AC pipe 10' X 4",50 kg cement, 20 pans sand,2 pans coarse aggregate and 1 no cowl . | Rs 2500 |

| S.No | Item Code | Description | Estimated Materials | Estimated Cost |
|------|-----------|--|--|----------------|
| 2 | ICCB | Improved wood burning Community chulha model IRTC, Dia 41 cm-55 cm, with wire cut brick liners , grating, baffle, junction box and chimney with cowl | Wire cut bricks 120,1 set CI gratings (22.5" X 22.5"), 1 set CI plate (22.5" X 22.5" X 3/4") , AC pipe 10'X 4",50 kg cement, 20 pans sand, 3 pans coarse aggregate and 1 no cowl . | Rs 2600 |
| 3 | ICCC | Improved wood burning Community chulha model IRTC, Dia 56 cm-70 cm, with wire cut brick liners , grating, baffle, junction box and chimney with cowl | Wire cut bricks 140,1 set CI gratings (22.5" X 22.5"), 1 set CI plate (22.5" X 22.5" X 3/4") , AC pipe 10'X 4",50 kg cement, 25 pans sand, 3 pans coarse aggregate and 1 no cowl . | Rs 3450 |
| 4 | ICCD | Improved wood burning Community chulha model IRTC, Dia 71 cm-85 cm, with wire cut brick liners , grating, baffle, junction box and chimney with cowl | Wire cut bricks 150,1 set CI gratings (22.5" X 22.5"), 1 set CI plate (22.5" X 22.5" X 3/4") , AC pipe 10'X 6",75 kg cement, 30 pans sand, 3 pans coarse aggregate and 1 no cowl . | Rs 3950 |
| 5 | ICCE | Improved wood burning Community chulha model IRTC, Dia 86 cm-100 cm, with wire cut brick liners , grating, baffle, junction box and chimney with cowl finish | Wire cut bricks 170,1 set CI gratings (30" X 30" X 1"), 1 set CI plate (30" X 30" X 1") , AC pipe 10'X 6",75 kg cement, 30 pans sand, 4 pans coarse aggregate and 1 no cowl . | Rs 4750 |
| 6 | ICCF | Improved wood burning Community chulha model IRTC, Dia 101 cm-115 cm, with wire cut brick liners , grating, baffle, junction box and chimney with cowl | Wire cut bricks 190,1 set CI gratings (30" X 30" X 1"), 1 set CI plate (22.5" X 22.5" X 3/4") , AC pipe 10'X 6",75 kg cement, 35 pans sand, 4 pans coarse aggregate and 1 no cowl . | Rs 5000 |
| 7 | ICCG | Improved wood burning Community chulha model IRTC, Dia 116 cm-130 cm, with wire cut brick liners , grating, baffle, junction box and chimney with cowl | Wire cut bricks 200,1 set CI gratings (45" X 30" X 1"), 1 set CI plate (22.5" X 22.5" X 3/4") , AC pipe 10'X 6",75 kg cement, 35 pans sand, 4 pans coarse aggregate and 1 no. cowl . | Rs 5650 |

| S.No | Item Code | Description | Estimated Materials | Estimated Cost |
|------|-----------|--|---|----------------|
| 8 | ICCH | Improved wood burning Community chulha model IRTC, Dia 131 cm-145 cm, with wire cut brick liners , grating, baffle, junction box and chimney with cowl | Wire cut bricks 210,1 set CI gratings (45" X 30" X 1"), 1 set CI plate (22.5" X 22.5" X 3/4") , AC pipe 10'X 6",100 kg cement, 40 pans sand, 4 pans coarse aggregate and 1 no. cowl . | Rs 6050 |

3.3 Subsidy Norms

| S.No | ITEM CODE | Estimated Cost | Subsidy Particulars | | |
|------|-----------|----------------|--|---|---|
| | | | Commercial | Community Institutions | Government Institutions |
| 1 | ICCA | Rs 2500 | 25% subsidy for material cost including transportation cost released through bank/ CDS net work subject to a limit of Rs 437.50, Rs 300 as SEW wages from local self governments to TESM certified SEWs on production of a digital photograph of the installation along with a proforma on the installation attested by a gazetted officer or functionary of | 80 % subsidy for material cost including transportation costs released through bank/ CDS net work subject to a limit of Rs 1400, Rs 300 as SEW wages from local self governments to TESM certified SEWs on production of a digital photograph of the installation along with a proforma on the installation attested by a gazetted officer or functionary of TESM. Rs 200 paid from | 100 % subsidy for material cost including transportation costs released through bank/ CDS net work subject to a limit of Rs 1750, Rs 300 as SEW wages from local self governments to TESM certified SEWs on production of a digital photograph of the installation along with a proforma on the |

| S.No | ITEM CODE | Estimated Cost | Subsidy Particulars | | |
|------|-----------|----------------|---|--|---|
| | | | Commercial | Community Institutions | Government Institutions |
| | | | TESM. Corpus fund for maintenance to be met by local self governments. | Local self governments against actual work out turn of beneficiary, as wages. Corpus fund for maintenance to be met by local self governments. | installation attested by a gazetted officer or functionary of TESM. Rs 200 paid from Local self governments against actual work out turn of beneficiary, as wages. Corpus fund for maintenance to be met by local self governments. |
| 2 | ICCB | Rs 2600 | 25% subsidy for material cost including transportation costs released through bank/ CDS net work subject to a limit of Rs 467.50, Rs 300 as SEW wages from local self governments to TESM certified SEWs on production of a digital photograph of the installation along with a proforma on the installation attested by a gazetted officer or functionary of TESM. Corpus fund for maintenance to be met by local self governments. | 80 % subsidy for material cost including transportation costs released through bank/ CDS net work subject to a limit of Rs 1496.Rs 300 as SEW wages from local self governments to TESM certified SEWs on production of a digital photograph of the installation along with a proforma on the installation attested by a gazetted officer or functionary of TESM.Rs 200 paid from Local self governments against actual work out turn of beneficiary, as wages. Corpus fund for maintenance to be met by local self | 100 % subsidy for material cost including transportation costs released through bank/ CDS net work subject to a limit of Rs 1870.Rs 300 as SEW wages from local self governments to TESM certified SEWs on production of a digital photograph of the installation along with a proforma on the installation attested by a gazetted officer or functionary of TESM. Rs 200 paid from Local self governments against actual |

| S.No | ITEM CODE | Estimated Cost | Subsidy Particulars | | |
|------|-----------|----------------|---|--|---|
| | | | Commercial | Community Institutions | Government Institutions |
| | | | | governments. | work out turn of beneficiary, as wages. Corpus fund for maintenance to be met by local self governments. |
| 3 | ICCC | Rs 3450 | 25% subsidy for material cost including transportation costs released through bank/ CDS net work subject to a limit of Rs 530. Rs 600 as SEW wages from local self governments to TESM certified SEWs on production of a digital photograph of the installation along with a proforma on the installation attested by a gazetted officer or functionary of TESM. Corpus fund for maintenance to be met by local self governments. | 80 % subsidy for material cost including transportation costs released through bank/ CDS net work subject to a limit of Rs 1696. Rs 600 as SEW wages from local self governments to TESM certified SEWs on production of a digital photograph of the installation along with a proforma on the installation attested by a gazetted officer or functionary of TESM. Rs 400 paid from Local self governments against actual work out turn of beneficiary, as wages. Corpus fund for maintenance to be met by local self governments. | 100 % subsidy for material cost including transportation costs released through bank/ CDS net work subject to a limit of Rs 2120. Rs 600 as SEW wages from local self governments to TESM certified SEWs on production of a digital photograph of the installation along with a proforma on the installation attested by a gazetted officer or functionary of TESM. Rs 400 paid from Local self governments against actual work out turn of beneficiary, as wages. Corpus fund for maintenance to be met by local self governments. |

| S.No | ITEM CODE | Estimated Cost | Subsidy Particulars | | |
|------|-----------|----------------|--|---|--|
| | | | Commercial | Community Institutions | Government Institutions |
| 4 | ICCD | Rs 3950 | 25% subsidy for material cost including transportation costs released through bank/ CDS net work subject to a limit of Rs 645, Rs 600 as SEW wages from local self governments to TESM certified SEWs on production of a digital photograph of the installation along with a proforma on the installation attested by a gazetted officer or functionary of TESM. Corpus fund for maintenance to be met by local self governments. | 80 % subsidy for material cost including transportation costs released through bank/ CDS net work subject to a limit of Rs 2064.Rs 600 as SEW wages from local self governments to TESM certified SEWs on production of a digital photograph of the installation along with a proforma on the installation attested by a gazetted officer or functionary of TESM.Rs 400 paid from Local self governments against actual work out turn of beneficiary, as wages. Corpus fund for maintenance to be met by local self governments. | 100 % subsidy for material cost including transportation costs released through bank/ CDS net work subject to a limit of Rs 2580.Rs 600 as SEW wages from local self governments to TESM certified SEWs on production of a digital photograph of the installation along with a proforma on the installation attested by a gazetted officer or functionary of TESM.Rs 400 paid from Local self governments against actual work out turn of beneficiary, as wages. Corpus fund for maintenance to be met by local self governments. |
| 5 | ICCE | Rs 4750 | 25% subsidy for material cost including transportation costs released through bank/ CDS net work subject to a limit of Rs 700. Rs 900 as SEW wages from local self | 80 % subsidy for material cost including transportation costs released through bank/ CDS net work subject to a limit of Rs 2240. Rs 900 as SEW wages from local self governments to | 100 % subsidy for material cost including transportation costs released through bank/ CDS net work subject to a limit of Rs 2800. Rs 900 as |

| S.No | ITEM CODE | Estimated Cost | Subsidy Particulars | | |
|------|-----------|----------------|--|---|--|
| | | | Commercial | Community Institutions | Government Institutions |
| | | | governments to TESM certified SEWs on production of a digital photograph of the installation along with a proforma on the installation attested by a gazetted officer or functionary of TESM. Corpus fund for maintenance to be met by local self governments. | TESM certified SEWs on production of a digital photograph of the installation along with a proforma on the installation attested by a gazetted officer or functionary of TESM. Rs 600 paid from Local self governments against actual work out turn of beneficiary, as wages. Corpus fund for maintenance to be met by local self governments. | SEW wages from local self governments to TESM certified SEWs on production of a digital photograph of the installation along with a proforma on the installation attested by a gazetted officer or functionary of TESM. Rs 600 paid from Local self governments against actual work out turn of beneficiary, as wages. Corpus fund for maintenance to be met by local self governments. |
| 6 | ICCF | Rs 5000 | 25% subsidy for material cost including transportation costs released through bank/ CDS net work subject to a limit of Rs 762.5. Rs 900 as SEW wages from local self governments to TESM certified SEWs on production of a digital photograph of the installation along with a proforma on the installation attested by a gazetted | 80 % subsidy for material cost including transportation costs released through bank/ CDS net work subject to a limit of Rs 2440. Rs 900 as SEW wages from local self governments to TESM certified SEWs on production of a digital photograph of the installation along with a proforma on the installation attested by a gazetted officer or functionary | 100 % subsidy for material cost including transportation costs released through bank/ CDS net work subject to a limit of Rs 3050. Rs 900 as SEW wages from local self governments to TESM certified SEWs on production of a digital photograph of the installation along with a |

| S.No | ITEM CODE | Estimated Cost | Subsidy Particulars | | |
|------|-----------|----------------|--|---|---|
| | | | Commercial | Community Institutions | Government Institutions |
| | | | officer or functionary of TESM. Corpus fund for maintenance to be met by local self governments. | of TESM. Rs 600 paid from Local self governments against actual work out turn of beneficiary, as wages. Corpus fund for maintenance to be met by local self governments. | proforma on the installation attested by a gazetted officer or functionary of TESM. Rs 600 paid from Local self governments against actual work out turn of beneficiary, as wages. Corpus fund for maintenance to be met by local self governments. |
| 7 | ICCG | Rs 5650 | 25% subsidy for material cost including transportation costs released through bank/ CDS net work subject to a limit of Rs 782.5.Rs 1200 as SEW wages from local self governments to TESM certified SEWs on production of a digital photograph of the installation along with a proforma on the installation attested by a gazetted officer or functionary of TESM. Corpus fund for maintenance to be met by local self governments. | 80 % subsidy for material cost including transportation costs released through bank/ CDS net work subject to a limit of Rs 2504.Rs 1200 as SEW wages from local self governments to TESM certified SEWs on production of a digital photograph of the installation along with a proforma on the installation attested by a gazetted officer or functionary of TESM.Rs 800 paid from Local self governments against actual work out turn of beneficiary, as wages. Corpus fund for maintenance to be met by local self | 100 % subsidy for material cost including transportation costs released through bank/ CDS net work subject to a limit of Rs 3130.Rs 1200 as SEW wages from local self governments to TESM certified SEWs on production of a digital photograph of the installation along with a proforma on the installation attested by a gazetted officer or functionary of TESM.Rs 800 paid from Local self governments against actual |

| S.No | ITEM CODE | Estimated Cost | Subsidy Particulars | | |
|------|-----------|----------------|--|---|--|
| | | | Commercial | Community Institutions | Government Institutions |
| | | | | governments. | work out turn of beneficiary, as wages. Corpus fund for maintenance to be met by local self governments. |
| 8 | ICCH | Rs 6050 | 25% subsidy for material cost including transportation costs released through bank/ CDS net work subject to a limit of Rs 870. Rs 1200 as SEW wages from local self governments to TESM certified SEWs on production of a digital photograph of the installation along with a proforma on the installation attested by a gazetted officer or functionary of TESM. Corpus fund for maintenance to be met by local self governments. | 80 % subsidy for material cost including transportation costs released through bank/ CDS net work subject to a limit of Rs 2784. Rs 1200 as SEW wages from local self governments to TESM certified SEWs on production of a digital photograph of the installation along with a proforma on the installation attested by a gazetted officer or functionary of TESM. Rs 800 paid from Local self governments against actual work out turn of beneficiary, as wages. Corpus fund for maintenance to be met by local self governments. | 100 % subsidy for material cost including transportation costs released through bank/ CDS net work subject to a limit of Rs 3480. Rs 1200 as SEW wages from local self governments to TESM certified SEWs on production of a digital photograph of the installation along with a proforma on the installation attested by a gazetted officer or functionary of TESM. Rs 800 paid from Local self governments against actual work out turn of beneficiary, as wages. Corpus fund for maintenance to be met by local self governments. |

4. SOLAR COOKER MODELS FOR DOMESTIC, COMMUNITY AND INSTITUTIONAL PURPOSES

4.1 Introduction

Box type solar cookers with transparent topped boxes and reflective lids designed to capture solar heat have been tried out in Kerala successfully. Dish type solar cookers using parabolic concentrators for directing sunlight on to a container are also becoming popular. Community solar cookers with flexible reflectors capable of reaching temperatures for steam cooking shall be used to more than 50 persons. A process of vendor accreditation for agencies which can provide delivery and support for such services shall be undertaken by TESM. The specifications mentioned are base specifications which shall be fine tuned during accreditation process.

4.2 Estimated Cost

| Sl.no | Item code | Description | Estimated materials | Estimated cost(Rs) |
|-------|-----------|--------------------------------|--|--------------------|
| 1 | SCBOX | Solar cooker box type Domestic | <p>Box type solar cooker consisting of an insulated box made of galvanised steel sheet of minimum thickness 0.45 mm/ Aluminium sheet (0.5mm) / fiber reinforced plastic(FRP) with minimum thickness 1 mm, metallic cooking tray, double glass lid on the cooking tray and a reflecting mirror fitted on the under side of the lid of the box. Insulation should be provided at sides and bottom including edges.</p> <p>The inner surface of the cooking tray shall be painted black with matte finish and it should withstand a temperature of 175⁰C. Single piece toughened glass of minimum thickness 4mm at a spacing of 10 ± 2mm shall be used in the cover plate. The cover plate should have the provision for keeping it in an inclined position. Gaskets and sealants may be of neoprene/EDPM/silicon rubber of minimum 2 mm thick. Cooking pots shall be made of aluminum alloy/stainless steel with suitable lids. The outside of pots and lids shall be coated with matte black. Bottom of the pots shall not be painted. 4 nos. of castor wheels as per IS: 5932 shall be provided. The screws, hinges, lever rods, locks, handle etc. used in the solar cooker shall be of stainless steel.</p> | 3000 |

| Sl.no | Item code | Description | Estimated materials | Estimated cost(Rs) |
|-------|-----------|---|---|--------------------|
| 2 | SCSK14 | Solar cooker Dish type Domestic | <p>Configuration: Paraboloid dish, made of single reflector, or by joining smaller pieces of reflector, fixed firmly to a rigid frame. Size and shape of the dish shall be such that when exposed to sun in the normal direction, a point focus would be formed. Dish diameter 1.4 m, minimum</p> <p>Reflector material Bright anodized aluminum sheets of thickness 0.4 mm, or Glass mirrors, thickness about 3 mm, with suitable protective layer on back to minimize degradation of the reflective coating due to weathering. Reflectivity > 80%, minimum Useful Life 5 Years, minimum focal point when dish is exposed to sun's rays at normal incidence, the size of the point where reflected rays get focused would be less or equal to the size of base area of the cooking pot.</p> <p>Supporting Frame of the dish Made either of MS rings supported by MS strips, FRP material, or thick MS wire-mesh structure. Rigid enough to resist any deformation of the dish shape due to wind pressure or manual handling. The MS structure will have epoxy/anti-rust coating.</p> | 7000 |
| 3 | SCSCHF | Solar cooker Dish type for Community cooking. | <p>Configuration Concentrating type having a secondary reflector to enable cooking of food inside the kitchen</p> <p>Primary Reflector Shape & make Elliptical dish, made up of multiple pieces of reflecting mirrors supported with a rigid frame / structure to form Scheffler reflector. Aperture area 7.0 sq. m, minimum Material Bright anodized aluminum sheets of thickness 0.4 mm, or Glass mirrors, of thickness about 3 mm and having suitable protective layer on back to minimize degradation of the reflective coating due to weathering Reflectivity > 80%, minimum Useful life 5 years, minimum Focal point When exposed to sun's rays at normal incidence, shape of the focal point should nearly be circular with a diameter of 350 to 400 mm formed on the opening of kitchen wall to reach the secondary</p> | 75000 |

| Sl.no | Item code | Description | Estimated materials | Estimated cost(Rs) |
|-------|-----------|-------------|---|--------------------|
| | | | <p>reflector Frame & support structure Rigid enough to resist deformation of the dish shape due to wind pressure or manual handling. made of anodized aluminum/mild steel with epoxy/powder coating Tracking mechanism Automatic, mechanical clock – work arrangement designed for E-W tracking of the reflector along its polar axis to align it in the direction normal to the sun’s rays having a provision for seasonal adjustment manually for the tilt angle.</p> <p>Secondary Reflector Bright anodized aluminum sheet with minimum reflectivity of 80% fixed on a curved metallic structure. Size & curvature of the structure is such that the reflected rays get focused on to the bottom of the cooking pot of about 300 mm diameter.</p> <p>Other Requirements The entire structure should be able to withstand wind pressure up to a speed of 60 km per hour without any damage. All parts/components should be weather resistant and able to withstand degradation due to climatic conditions for a period of 15 years (except for reflecting mirrors which may require replacement early). The cooker to be installed and commissioned at the site by the supplier. Necessary training will be imparted to the beneficiary regarding operation, maintenance and trouble shooting of the cooker to be provided by vendor. Two years warranty shall be given by the vendor for the whole system with free service for repair / replacement of parts during warranty period.</p> | |

4.3 Subsidy Norms

| S.No | Item Code | Estimated Cost | Subsidy Particulars | | |
|------|-----------|----------------|---|---|--------------------------|
| | | | Domestic (BPL only) | Community | Institutional |
| 1 | SCBOX | 3000 | 30% of the system price + applicable MNRE subsidy | Not Applicable | Not Applicable |
| 2 | SCSK14 | 7000 | 30% of the system price + applicable MNRE subsidy | Not Applicable | Not Applicable |
| 3 | SCSCHF | 75000 | Not Applicable | 50% of the system price + applicable MNRE subsidy | 100% of the system price |

5. SOLAR WATER HEATER MODELS FOR DOMESTIC, COMMERCIAL AND INSTITUTIONAL PURPOSES

5.1 Introduction

Solar water heaters for generating hot water of around 60 to 70°C using flat plate collector and evacuated tubes have been disseminated widely. Models using Heat Exchanger can ensure that solar water heaters can be used to provide hot water for cooking as well. However this is not very popular in the state as of now. Solar water heater products are provided by vendors accredited for the programme. Dissemination of Solar Water Heating Systems (SWHS) approved by the Total Energy Security Mission shall be based on a combined programme of capital subsidy and loan linked interest subsidy. The interest subsidy scheme of Ministry of New and Renewable Energy is integrated into the package. 5 years' guarantee shall be covered. Minimum cost for cold water and hot water plumbing and wiring shall be covered as additional capital cost. A corpus fund shall be created with 10% costs for

post warranty maintenance, repair, and insurance. The corpus fund shall be maintained by the local self governments separately for quality control, technical support and maintenance of community installations through accredited vendors. Release of cost of accessories shall be subject to submission of proof of installation and measurement of plumbing and electrical connection particulars by TESM functionaries. The specifications mentioned are base specifications which shall be fine tuned during accreditation process.

5.2 Estimated Cost

| Sl.no | Item code | Description | Estimated materials | Estimated cost(Rs) |
|-------|-----------|--|--|--------------------|
| 1 | SWHO100F | 100 LPD Flat Plate Collector (FPC) Based Solar water heater without heat exchanger | IS 12933(part-1), IS12933(part-2)/2003 marked solar flat plate collector with a minimum surface area of 2 sq.m, with makeup tank of 50 liters, 2 KW electric back up heater (ISI), 3 valves to be provided one at inlet, Outlet & make up tank. Collector stand assembly must be of MS angle size 38x38x4mm, or tubular structure, pretreated, stove enamelled with black colour or powder coated. Hot water storage tank shall be non-pressure type made of stainless steel grade X04Cr19Ni9 or X07Cr18Ni9 Tig Welded, insulated with 40mm thick PUF of 32Kg/m ³ or with 100mm thick rock wool/mineral wool of 48Kg/m ³ density with 22 SWG aluminium cladding. PUF insulation may be pre extruded type fitted with FRP external cladding or injection moulded in a twin walled steel tank and PPE/HDPE end cap. Sacrificial Anode has to be provided to avoid Galvanising. Plumbing for cold water for a length upto 10mtr using ISI marked 1" PVC pipe, hot water plumbing for a length upto 10mtr using ¾" CPVC, Wiring for back up heater upto a length of 10mtr with 2.5sq.mm ISI marked copper cable. | 25000 |

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| 2 | SWHO200F | 200 LPD Flat Plate Collector (FPC) Solar water heater without heat exchanger | <p>IS 12933(part-1), IS12933(part-2)/2003 marked solar flat plate collector with a minimum surface area of 4 sq.m, makeup tank of 50 liters PVC tank with adequate structure, 2 KW electric back up heater with (ISI) mark, 3 valves to be provided one at inlet, Outlet & make up tank. Collector stand assembly made of MS angle size 38x38x4mm or tubular structure, pretreated ,stove enamelled / powder coated in black colour. Interconnection ISI marked class(B) GI pipe insulated with 50mm thick glass wool with density of 48kg/m³ and cladde with 26swg Aluminium sheet, EDPM hose pipes may also be used wherever applicable for inter connections. Hot water storage tank shall be non-pressure type made of stainless steel grade X04Cr19Ni9 orX07Cr18Ni9 Tig Welded, isulated with 40mm thick PUF of 32Kg/m³ or with 100mm thick rock wool/mineral wool of 48Kg/m³ density with 22 SWG aluminium cladding. PUF insulation may be pre extruded type fitted with FRP external cladding or injection moulded in a twin walled steel tank and PPE/HDPE end cap. Sacrificial Anode has to be provided to avoid Galvanising. Plumbing for cold water for a length upto 10mtr using ISI marked 1”PVC pipe, hot water plumbing for a length upto 10mtr using ¾”CPVC, Wiring for back up heater upto a length of 10mtr with 2.5sq.mm ISI marked copper cable.</p> | 40000 |
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| 3 | SWHO300F | 300 LPD Flat Plate Collector (FPC) Solar water heater without heat exchanger | <p>IS 12933(part-1), IS12933(part-2)/2003 marked solar flat plate collector with a minimum surface area of 4 sq.m, makeup tank of 50 liters PVC tank with adequate structure, 2 KW electric back up heater with (ISI) mark, 3 valves to be provided one at inlet, Outlet & make up tank. Collector stand assembly made of MS angle size 38x38x4mm or tubular structure, pretreated ,stove enamelled / powder coated in black colour. Interconnection ISI marked class(B) GI pipe insulated with 50mm thick glass wool with density of 48kg/m³ and cladded with 26swg Aluminium sheet, EDPM hose pipes may also be used wherever applicable for inter connections. Hot water storage tank shall be non-pressure type made of stainless steel grade X04Cr19Ni9 orX07Cr18Ni9 Tig Welded, isulated with 40mm thick PUF of 32Kg/m³ or with 100mm thick rock wool/mineral wool of 48Kg/m³ density with 22 SWG aluminium cladding. PUF insulation may be pre extruded type fitted with FRP external cladding or injection moulded in a twin walled steel tank and PPE/HDPE end cap. Sacrificial Anode has to be provided to avoid Galvanising. Plumbing for cold water for a length upto 10mtr using ISI marked 1”PVC pipe, hot water plumbing for a length upto 10mtr using ¾”CPVC, Wiring for back up heater upto a length of 10mtr with 2.5sq.mm SWG ISI marked copper cable.</p> | 50000 |
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| 4 | SWHH300F | 300 LPD Flat Plate Collector (FPC) Solar water heater with heat exchanger | IS 12933(part-1), IS12933(part-2)/2003 marked solar flat plate collector with a minimum surface area of 4 sq.m, makeup tank of 50 liters PVC tank with adequate structure, 2 KW electric back up heater with (ISI) mark, 3 valves to be provided one at inlet, Outlet & make up tank. Collector stand assembly made of MS angle size 38x38x4mm or tubular structure, pretreated ,stove enamelled / powder coated in black colour. Interconnection ISI marked class(B) GI pipe insulated with 50mm thick glass wool with density of 48kg/m ³ and cladded with 26swg Aluminium sheet, EDPM hose pipes may also be used wherever applicable for inter connections. Hot water storage tank shall be non-pressure type made of stainless steel grade X04Cr19Ni9 orX07Cr18Ni9 Tig Welded, isulated with 40mm thick PUF of 32Kg/m ³ or with 100mm thick rock wool/mineral wool of 48Kg/m ³ density with 22 SWG aluminium cladding. PUF insulation may be pre extruded type fitted with FRP external cladding or injection moulded in a twin walled steel tank and PPE/HDPE end cap. Sacrificial Anode has to be provided to avoid Galvanising. Plumbing for cold water for a length upto 10mtr using ISI marked 1”PVC pipe, hot water plumbing for a length upto 10mtr using ¾”CPVC, Wiring for back up heater upto a length of 10mtr with 2.5sq.mm SWG ISI marked copper cable. | 76500 |
| 5 | SWHO500F | 500 LPD Flat Plate Collector (FPC) Solar water heater without heat exchanger | IS 12933(part-1), IS12933(part-2)/2003 marked solar flat plate collector with a minimum surface area of 4 sq.m, makeup tank of 50 liters PVC tank with adequate structure, 4 KW electric back up heater with (ISI) mark, 3 valves to be provided one at inlet, Outlet & make up tank. Collector stand assembly made of MS angle size 38x38x4mm or tubular structure, pretreated ,stove enamelled / powder coated in black colour. Interconnection ISI marked class(B) GI pipe insulated with 50mm thick glass wool with density of 48kg/m ³ and cladded with 26swg Aluminium sheet, EDPM hose pipes may also be used wherever applicable for inter connections. | 75000 |

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| | | | Hot water storage tank shall be non-pressure type made of stainless steel grade X04Cr19Ni9 orX07Cr18Ni9 Tig Welded, insulated with 40mm thick PUF of 32Kg/m ³ or with 100mm thick rock wool/mineral wool of 48Kg/m ³ density with 22 SWG aluminium cladding. PUF insulation may be pre extruded type fitted with FRP external cladding or injection moulded in a twin walled steel tank and PPE/HDPE end cap. Sacrificial Anode has to be provided to avoid Galvanising. Plumbing for cold water for a length upto 10mtr using ISI marked 1”PVC pipe, hot water plumbing for a length upto 10mtr using ¾”CPVC, Wiring for back up heater upto a length of 10mtr with 4sq.mm SWG ISI marked copper cable. | |
| 6 | SWHH500F | 500 LPD Flat Plate Collector (FPC) Solar water heater with heat exchanger | IS 12933(part-1), IS12933(part-2)/2003 marked solar flat plate collector with a minimum surface area of 4 sq.m, makeup tank of 50 liters PVC tank with adequate structure, 4 KW electric back up heater with (ISI) mark, 3 valves to be provided one at inlet, Outlet & make up tank. Collector stand assembly made of MS angle size 38x38x4mm or tubular structure, pretreated ,stove enamelled / powder coated in black colour. Interconnection ISI marked class(B) GI pipe insulated with 50mm thick glass wool with density of 48kg/m ³ and cladde with 26swg Aluminium sheet, EDPM hose pipes may also be used wherever applicable for inter connections. Hot water storage tank shall be non-pressure type made of stainless steel grade X04Cr19Ni9 orX07Cr18Ni9 Tig Welded, insulated with 40mm thick PUF of 32Kg/m ³ or with 100mm thick rock wool/mineral wool of 48Kg/m ³ density with 22 SWG aluminium cladding. PUF insulation may be pre extruded type fitted with FRP external cladding or injection moulded in a twin walled steel tank and PPE/HDPE end cap. Sacrificial Anode has to be provided to avoid Galvanising. Plumbing for cold water for a length upto 10mtr using ISI marked 1”PVC pipe, hot water plumbing for a length upto 10mtr using ¾”CPVC, Wiring for back up heater upto a length of 10mtr | 103000 |

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| | | | with 4sq.mm SWG ISI marked copper cable. | |
| 7 | SWHO1000F | 1000 LPD Flat Plate Collector (FPC) Solar water heater without heat exchanger | IS 12933(part-1), IS12933(part-2)/2003 marked solar flat plate collector with a minimum surface area of 4 sq.m, makeup tank of 50 liters PVC tank with adequate structure, 9 KW electric back up heater with (ISI) mark, 3 valves to be provided one at inlet, Outlet & make up tank. Collector stand assembly made of MS angle size 38x38x4mm or tubular structure, pretreated ,stove enamelled / powder coated in black colour. Interconnection ISI marked class(B) GI pipe insulated with 50mm thick glass wool with density of 48kg/m3 and cladde with 26swg Aluminium sheet, EDPM hose pipes may also be used wherever applicable for inter connections. Hot water storage tank shall be non-pressure type made of stainless steel grade X04Cr19Ni9 orX07Cr18Ni9 Tig Welded, insulated with 40mm thick PUF of 32Kg/m3 or with 100mm thick rock wool/mineral wool of 48Kg/m3 density with 22 SWG aluminium cladding. PUF insulation may be pre extruded type fitted with FRP external cladding or injection moulded in a twin walled steel tank and PPE/HDPE end cap. Sacrificial Anode has to be provided to avoid Galvanising. Plumbing for cold water for a length upto 10mtr using ISI marked 1”PVC pipe, hot water plumbing for a length upto 10mtr using ¾”CPVC, Wiring for back up heater upto a length of 10mtr with 6sq.mm ISI marked copper cable. | 170000 |
| 8 | SWHH1000F | 1000 LPD Flat Plate Collector (FPC) Solar water heater with heat exchanger | IS 12933(part-1), IS12933(part-2)/2003 marked solar flat plate collector with a minimum surface area of 4 sq.m, makeup tank of 50 liters PVC tank with adequate structure, 9 KW electric back up heater with (ISI) mark, 3 valves to be provided one at inlet, Outlet & make up tank. Collector stand | 206000 |

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| | | | <p>assembly made of MS angle size 38x38x4mm or tubular structure, pretreated ,stove enamelled / powder coated in black colour. Interconnection ISI marked class(B) GI pipe insulated with 50mm thick glass wool with density of 48kg/m³ and cladde with 26swg Aluminium sheet, EDPM hose pipes may also be used wherever applicable for inter connections. Hot water storage tank shall be non-pressure type made of stainless steel grade X04Cr19Ni9 orX07Cr18Ni9 Tig Welded, isulated with 40mm thick PUF of 32Kg/m³ or with 100mm thick rock wool/mineral wool of 48Kg/m³ density with 22 SWG aluminium cladding. PUF insulation may be pre extruded type fitted with FRP external cladding or injection moulded in a twin walled steel tank and PPE/HDPE end cap. Sacrificial Anode has to be provided to avoid Galvanising. Plumbing for cold water for a length upto 10mtr using ISI marked 1”PVC pipe, hot water plumbing for a length upto 10mtr using ¾”CPVC, Wiring for back up heater upto a length of 10mtr with 6sq.mm SWG ISI marked copper cable.</p> | |
| 9 | SWHO1500F | 1500 LPD Flat Plate Collector (FPC) Solar water heater without heat exchanger | <p>IS 12933(part-1), IS12933(part-2)/2003 marked solar flat plate collector with a minimum surface area of 4 sq.m, makeup tank of 50 liters PVC tank with adequate structure, 9 KW electric back up heater with (ISI) mark, 3 valves to be provided one at inlet, Outlet & make up tank. Collector stand assembly made of MS angle size 38x38x4mm or tubular structure, pretreated ,stove enamelled / powder coated in black colour. Interconnection ISI marked class(B) GI pipe insulated with 50mm thick glass wool with density of 48kg/m³ and cladde with 26swg Aluminium sheet, EDPM hose pipes may also be used wherever applicable for inter connections. Hot water storage tank shall be non-pressure type made of stainless steel grade X04Cr19Ni9 orX07Cr18Ni9 Tig Welded, isulated with 40mm thick PUF of 32Kg/m³ or with 100mm thick rock wool/mineral wool of 48Kg/m³ density with 22 SWG aluminium cladding. PUF insulation may be pre extruded</p> | 255000 |

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| | | | type fitted with FRP external cladding or injection moulded in a twin walled steel tank and PPE/HDPE end cap. Sacrificial Anode has to be provided to avoid Galvanising. Plumbing for cold water for a length upto 10mtr using ISI marked 1”PVC pipe, hot water plumbing for a length upto 10mtr using ¾”CPVC, Wiring for back up heater upto a length of 10mtr with 6sq.mm SWG ISI marked copper cable. | |
| 10 | SWHH1500F | 1500 LPD Flat Plate Collector (FPC) Solar water heater with heat exchanger | IS 12933(part-1), IS12933(part-2)/2003 marked solar flat plate collector with a minimum surface area of 4 sq.m, makeup tank of 50 liters PVC tank with adequate structure, 9 KW electric back up heater with (ISI) mark, 3 valves to be provided one at inlet, Outlet & make up tank. Collector stand assembly made of MS angle size 38x38x4mm or tubular structure, pretreated ,stove enamelled / powder coated in black colour. Interconnection ISI marked class(B) GI pipe insulated with 50mm thick glass wool with density of 48kg/m3 and cladded with 26swg Aluminium sheet, EDPM hose pipes may also be used wherever applicable for inter connections. Hot water storage tank shall be non-pressure type made of stainless steel grade X04Cr19Ni9 orX07Cr18Ni9 Tig Welded, isulated with 40mm thick PUF of 32Kg/m3 or with 100mm thick rock wool/mineral wool of 48Kg/m3 density with 22 SWG aluminium cladding. PUF insulation may be pre extruded type fitted with FRP external cladding or injection moulded in a twin walled steel tank and PPE/HDPE end cap. Sacrificial Anode has to be provided to avoid Galvanising. Plumbing for cold water for a length upto 10mtr using ISI marked 1”PVC pipe, hot water plumbing for a length upto 10mtr using ¾”CPVC, Wiring for back up heater upto a length of 10mtr with 6sq.mm SWG ISI marked copper cable. | 304000 |
| 11 | SWHO2000F | 2000 LPD Flat Plate Collector (FPC) Solar water heater without heat exchanger | IS 12933(part-1), IS12933(part-2)/2003 marked solar flat plate collector with a minimum surface area of 4 sq.m, makeup tank of 50 liters PVC tank with adequate structure, 12 KW electric back up heater with (ISI) mark, 3 valves to be | 350000 |

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| | | | <p>provided one at inlet, Outlet & make up tank. Collector stand assembly made of MS angle size 38x38x4mm or tubular structure, pretreated ,stove enamelled / powder coated in black colour. Interconnection ISI marked class(B) GI pipe insulated with 50mm thick glass wool with density of 48kg/m³ and cladde with 26swg Aluminium sheet, EDPM hose pipes may also be used wherever applicable for inter connections. Hot water storage tank shall be non-pressure type made of stainless steel grade X04Cr19Ni9 orX07Cr18Ni9 Tig Welded, isulated with 40mm thick PUF of 32Kg/m³ or with 100mm thick rock wool/mineral wool of 48Kg/m³ density with 22 SWG aluminium cladding. PUF insulation may be pre extruded type fitted with FRP external cladding or injection moulded in a twin walled steel tank and PPE/HDPE end cap. Sacrificial Anode has to be provided to avoid Galvanising. Plumbing for cold water for a length upto 10mtr using ISI marked 1”PVC pipe, hot water plumbing for a length upto 10mtr using ¾”CPVC, Wiring for back up heater upto a length of 10mtr with with 10sq.mm ISI marked copper cable.</p> | |
| 12 | SWHH2000F | 2000 LPD Flat Plate Collector (FPC) Solar water heater with heat exchanger | <p>IS 12933(part-1), IS12933(part-2)/2003 marked solar flat plate collector with a minimum surface area of 4 sq.m, makeup tank of 50 liters PVC tank with adequate structure, 12 KW electric back up heater with (ISI) mark, 3 valves to be provided one at inlet, Outlet & make up tank. Collector stand assembly made of MS angle size 38x38x4mm or tubular structure, pretreated ,stove enamelled / powder coated in black colour. Interconnection ISI marked class(B) GI pipe insulated with 50mm thick glass wool with density of 48kg/m³ and cladde with 26swg Aluminium sheet, EDPM hose pipes may also be used wherever applicable for inter connections. Hot water storage tank shall be non-pressure type made of stainless steel grade X04Cr19Ni9 orX07Cr18Ni9 Tig Welded, isulated with 40mm thick PUF of 32Kg/m³ or with 100mm thick rock wool/mineral wool of 48Kg/m³ density with 22</p> | 396000 |

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| | | | SWG aluminium cladding. PUF insulation may be pre extruded type fitted with FRP external cladding or injection moulded in a twin walled steel tank and PPE/HDPE end cap. Sacrificial Anode has to be provided to avoid Galvanising. Plumbing for cold water for a length upto 10mtr using ISI marked 1”PVC pipe, hot water plumbing for a length upto 10mtr using ¾”CPVC, Wiring for back up heater upto a length of 10mtr with with 10sq.mm ISI marked copper cable. | |
| 13 | SWHO3000F | 3000 LPD Flat Plate Collector (FPC) Solar water heater without heat exchanger | IS 12933(part-1), IS12933(part-2)/2003 marked solar flat plate collector with a minimum surface area of 4 sq.m, makeup tank of 50 liters PVC tank with adequate structure, 12 KW electric back up heater with (ISI) mark, 3 valves to be provided one at inlet, Outlet & make up tank. Collector stand assembly made of MS angle size 38x38x4mm or tubular structure, pretreated ,stove enamelled / powder coated in black colour. Interconnection ISI marked class(B) GI pipe insulated with 50mm thick glass wool with density of 48kg/m3 and cladded with 26swg Aluminium sheet, EDPM hose pipes may also be used wherever applicable for inter connections. Hot water storage tank shall be non-pressure type made of stainless steel grade X04Cr19Ni9 orX07Cr18Ni9 Tig Welded, isulated with 40mm thick PUF of 32Kg/m3 or with 100mm thick rock wool/mineral wool of 48Kg/m3 density with 22 SWG aluminium cladding. PUF insulation may be pre extruded type fitted with FRP external cladding or injection moulded in a twin walled steel tank and PPE/HDPE end cap. Sacrificial Anode has to be provided to avoid Galvanising. Plumbing for cold water for a length upto 10mtr using ISI marked 1”PVC pipe, hot water plumbing for a length upto 10mtr using ¾”CPVC, Wiring for back up heater upto a length of 10mtr with 10sq.mm ISI marked copper cable. | 525000 |

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| 14 | SWHH3000F | 3000 LPD Flat Plate Collector (FPC) Solar water heater with heat exchanger | IS 12933(part-1), IS12933(part-2)/2003 marked solar flat plate collector with a minimum surface area of 4 sq.m, makeup tank of 50 liters PVC tank with adequate structure, 12 KW electric back up heater with (ISI) mark, 3 valves to be provided one at inlet, Outlet & make up tank. Collector stand assembly made of MS angle size 38x38x4mm or tubular structure, pretreated ,stove enamelled / powder coated in black colour. Interconnection ISI marked class(B) GI pipe insulated with 50mm thick glass wool with density of 48kg/m ³ and cladded with 26swg Aluminium sheet, EDPM hose pipes may also be used wherever applicable for inter connections. Hot water storage tank shall be non-pressure type made of stainless steel grade X04Cr19Ni9 orX07Cr18Ni9 Tig Welded, isulated with 40mm thick PUF of 32Kg/m ³ or with 100mm thick rock wool/mineral wool of 48Kg/m ³ density with 22 SWG aluminium cladding. PUF insulation may be pre extruded type fitted with FRP external cladding or injection moulded in a twin walled steel tank and PPE/HDPE end cap. Sacrificial Anode has to be provided to avoid Galvanising. Plumbing for cold water for a length upto 10mtr using ISI marked 1” PVC pipe, hot water plumbing for a length upto 10mtr using ¾”CPVC, Wiring for back up heater upto a length of 10mtr with 10sq.mm ISI marked copper cable. | 591000 |
| 15 | SWHO100E | 100 LPD ETC based Solar water heater without heat exchanger | Manufactured by MNES approved firms having minimum 14 tubes makeup tank of 50 liters PVC tank with adequate structure, 2 KW electric back up heater with (ISI) mark, 3 valves to be provided one at inlet, Outlet & make up tank. Collector stand assembly made of MS angle size 38x38x4mm or tubular structure, pretreated ,stove enamelled / powder coated in black colour. Interconnection ISI marked class(B) GI pipe insulated with 50mm thick glass wool with density of 48kg/m ³ and cladded with 26swg Aluminium sheet, EDPM hose pipes may also be used wherever applicable for inter connections. Hot water storage tank shall be non-pressure | 19000 |

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|----|----------|---|---|-------|
| | | | type made of stainless steel grade X04Cr19Ni9 orX07Cr18Ni9 Tig Welded, insulated with 40mm thick PUF of 32Kg/m3 or with 100mm thick rock wool/mineral wool of 48Kg/m3 density with 22 SWG aluminium cladding. PUF insulation may be pre extruded type fitted with FRP external cladding or injection moulded in a twin walled steel tank and PPE/HDPE end cap. Sacrificial Anode has to be provided to avoid Galvanising. Plumbing for cold water for a length upto 10mtr using ISI marked 1” PVC pipe, hot water plumbing for a length upto 10mtr using ¾”CPVC, Wiring for back up heater upto a length of 10mtr with 2.5 sq.mm ISI marked copper cable. | |
| 16 | SWHO200E | 200 LPD ETC based Solar water heater without heat exchanger | Manufactured by MNES approved firms having minimum 28 tubes makeup tank of 50 liters PVC tank with adequate structure, 2 KW electric back up heater with (ISI) mark, 3 valves to be provided one at inlet, Outlet & make up tank. Collector stand assembly made of MS angle size 38x38x4mm or tubular structure, pretreated ,stove enamelled / powder coated in black colour. Interconnection ISI marked class(B) GI pipe insulated with 50mm thick glass wool with density of 48kg/m3 and cladded with 26swg Aluminium sheet, EDPM hose pipes may also be used wherever applicable for inter connections. Hot water storage tank shall be non-pressure type made of stainless steel grade X04Cr19Ni9 orX07Cr18Ni9 Tig Welded, insulated with 40mm thick PUF of 32Kg/m3 or with 100mm thick rock wool/mineral wool of 48Kg/m3 density with 22 SWG aluminium cladding. PUF insulation may be pre extruded type fitted with FRP external cladding or injection moulded in a twin walled steel tank and PPE/HDPE end cap. Sacrificial Anode has to be provided to avoid Galvanising. Plumbing for cold water for a length upto 10mtr using ISI marked 1” PVC pipe, hot water plumbing for a length upto 10mtr using ¾”CPVC, Wiring for back up heater upto a length of 10mtr with 2.5 sq.mm ISI marked copper cable. | 35000 |

| | | | | |
|----|----------|---|--|-------|
| 17 | SWHO300E | 300 LPD ETC based Solar water heater without heat exchanger | <p>Manufactured by MNES approved firms having minimum 42 tubes makeup tank of 50 liters PVC tank with adequate structure, 2 KW electric back up heater with (ISI) mark, 3 valves to be provided one at inlet, Outlet & make up tank. Collector stand assembly made of MS angle size 38x38x4mm or tubular structure, pretreated ,stove enamelled / powder coated in black colour. Interconnection ISI marked class(B) GI pipe insulated with 50mm thick glass wool with density of 48kg/m³ and cladded with 26swg Aluminium sheet, EDPM hose pipes may also be used wherever applicable for inter connections. Hot water storage tank shall be non-pressure type made of stainless steel grade X04Cr19Ni9 orX07Cr18Ni9 Tig Welded, isulated with 40mm thick PUF of 32Kg/m³ or with 100mm thick rock wool/mineral wool of 48Kg/m³ density with 22 SWG aluminium cladding. PUF insulation may be pre extruded type fitted with FRP external cladding or injection moulded in a twin walled steel tank and PPE/HDPE end cap. Sacrificial Anode has to be provided to avoid Galvanising. Plumbing for cold water for a length upto 10mtr using ISI marked 1” PVC pipe, hot water plumbing for a length upto 10mtr using ¾”CPVC, Wiring for back up heater upto a length of 10mtr with 2.5 sq.mm ISI marked copper cable.</p> | 45000 |
| 18 | SWHO500E | 500 LPD ETC based Solar water heater without heat exchanger | <p>Manufactured by MNES approved firms having minimum 70 tubes makeup tank of 50 liters PVC tank with adequate structure, 4 KW electric back up heater with (ISI) mark, 3 valves to be provided one at inlet, Outlet & make up tank. Collector stand assembly made of MS angle size 38x38x4mm or tubular structure, pretreated ,stove enamelled / powder coated in black colour. Interconnection ISI marked class(B) GI pipe insulated with 50mm thick glass wool with density of 48kg/m³ and cladded with 26swg Aluminium sheet, EDPM hose pipes may also be used wherever applicable for inter connections. Hot water storage tank shall be non-pressure type made of stainless steel grade X04Cr19Ni9 orX07Cr18Ni9</p> | 72000 |

| | | | | |
|----|-----------|--|--|--------|
| | | | Tig Welded, insulated with 40mm thick PUF of 32Kg/m ³ or with 100mm thick rock wool/mineral wool of 48Kg/m ³ density with 22 SWG aluminium cladding. PUF insulation may be pre extruded type fitted with FRP external cladding or injection moulded in a twin walled steel tank and PPE/HDPE end cap. Sacrificial Anode has to be provided to avoid Galvanising. Plumbing for cold water for a length upto 10mtr using ISI marked 1" PVC pipe, hot water plumbing for a length upto 10mtr using ¾"CPVC, Wiring for back up heater upto a length of 10mtr with 4 sq.mm ISI marked copper cable. | |
| 19 | SWHO1000E | 1000 LPD ETC based Solar water heater without heat exchanger | Manufactured by MNES approved firms having minimum 120 tubes makeup tank of 50 liters PVC tank with adequate structure, 9 KW electric back up heater with (ISI) mark, 3 valves to be provided one at inlet, Outlet & make up tank. Collector stand assembly made of MS angle size 38x38x4mm or tubular structure, pretreated, stove enamelled / powder coated in black colour. Interconnection ISI marked class(B) GI pipe insulated with 50mm thick glass wool with density of 48kg/m ³ and cladded with 26swg Aluminium sheet, EDPM hose pipes may also be used wherever applicable for inter connections. Hot water storage tank shall be non-pressure type made of stainless steel grade X04Cr19Ni9 orX07Cr18Ni9 Tig Welded, insulated with 40mm thick PUF of 32Kg/m ³ or with 100mm thick rock wool/mineral wool of 48Kg/m ³ density with 22 SWG aluminium cladding. PUF insulation may be pre extruded type fitted with FRP external cladding or injection moulded in a twin walled steel tank and PPE/HDPE end cap. Sacrificial Anode has to be provided to avoid Galvanising. Plumbing for cold water for a length upto 10mtr using ISI marked 1" PVC pipe, hot water plumbing for a length upto 10mtr using ¾"CPVC, Wiring for back up heater upto a length of 10mtr with 6 sq.mm ISI marked copper cable. | 155000 |
| 20 | SWHO1500E | 1500 LPD ETC based Solar water heater | Manufactured by MNES approved firms having minimum 180 | 225000 |

| | | | | |
|--|--|------------------------|--|--|
| | | without heat exchanger | tubes makeup tank of 50 liters PVC tank with adequate structure, 9 KW electric back up heater with (ISI) mark, 3 valves to be provided one at inlet, Outlet & make up tank. Collector stand assembly made of MS angle size 38x38x4mm or tubular structure, pretreated ,stove enamelled / powder coated in black colour. Interconnection ISI marked class(B) GI pipe insulated with 50mm thick glass wool with density of 48kg/m ³ and cladded with 26swg Aluminium sheet, EDPM hose pipes may also be used wherever applicable for inter connections. Hot water storage tank shall be non-pressure type made of stainless steel grade X04Cr19Ni9 orX07Cr18Ni9 Tig Welded, isulated with 40mm thick PUF of 32Kg/m ³ or with 100mm thick rock wool/mineral wool of 48Kg/m ³ density with 22 SWG aluminium cladding. PUF insulation may be pre extruded type fitted with FRP external cladding or injection moulded in a twin walled steel tank and PPE/HDPE end cap. Sacrificial Anode has to be provided to avoid Galvanising. Plumbing for cold water for a length upto 10mtr using ISI marked 1” PVC pipe, hot water plumbing for a length upto 10mtr using ¾”CPVC, Wiring for back up heater upto a length of 10mtr with 6 sq.mm ISI marked copper cable. | |
|--|--|------------------------|--|--|

Note: Cost includes 10 mtr cold water pipe line of specified dia, 10 mtr hot water pipe line of specified dia and 10 mtr electrical wiring with ISI marked 3 pin plug, socket and switch of specified amperage. For additional plumbing and wiring rates shall be as follows.

| Sl.No | Description | Pipe dia / Wire size | Unit rate(Rs.) per metre |
|-------|-------------------|----------------------|--------------------------|
| 1 | Cold water piping | ¾” | 50 |
| 2 | Cold water piping | 1” | 65 |
| 3 | Hot water piping | ¾” | 100 |
| 4 | Hot water piping | 1” | 140 |

| | | | |
|---|-------------------|-----------|-----|
| 5 | Electrical wiring | 2.5 sq.mm | 100 |
| 6 | Electrical wiring | 4 sq.mm | 140 |
| 7 | Electrical wiring | 6 sq.mm | 200 |
| 8 | Electrical wiring | 10 sq.mm | 300 |

5.3 Subsidy Norms

| S.No | ITEM CODE | Estimated Cost(Rs.) | Subsidy Particulars | | |
|------|-----------|----------------------------------|---|----------------|---|
| | | | Domestic (All) | Commercial | Government(Institutional) |
| 1 | SWHO100F | 25000 plus 2800 for accessories. | 15% Subsidy of system cost released through bank subjected a maximum of Rs. 3750/- plus cost of essential plumbing and electrical wiring limited to Rs.2800/-. Interest subsidy from MNRE for 85 % of the loan to the extend of 2% can be also availed. | NOT APPLICABLE | 100 % Subsidy of system cost released through bank subjected a maximum of Rs. 25000/- Rs.2500/-has to be set apart by Local self government for future maintenance |
| 2 | SWHO200F | 40000 plus 2800 for accessories. | 15% Subsidy of system cost released through bank subjected a maximum of Rs. 6000/- plus cost of essential plumbing and electrical wiring limited to Rs.2800/-.Interest subsidy from MNRE for 85 % of the loan to the extend of 2 % can be also availed. | NOT APPLICABLE | 100 % Subsidy of system cost released through bank subjected a maximum of Rs. 40000/- Rs.4000/- has to be set apart by Local self government for future maintenance |

| S.No | ITEM CODE | Estimated Cost(Rs.) | Subsidy Particulars | | |
|------|-----------|----------------------------------|--|--|---|
| | | | Domestic (All) | Commercial | Government(Institutional) |
| 3 | SWHO300F | 50000 plus 2800 for accessories. | 15% Subsidy of system cost released through bank subjected a maximum of Rs. 7500/- plus cost of essential plumbing and electrical wiring limited to Rs.2800/-. Interest subsidy from MNRE for 85 % of the loan to the extend of 2 % can be also availed. | 15% Subsidy of system cost released through bank subjected a maximum of Rs. 7500/- plus cost of essential plumbing and electrical wiring limited to Rs.2800/-. Interest subsidy from MNRE for 85 % of the loan to the extend of 5 % can be also availed. | 100 % Subsidy of system cost released through bank subjected a maximum of Rs. 50000/- plus cost of essential plumbing and electrical wiring limited to Rs.2800/-. Rs.5000/- has to be set apart by Local self government for future maintenance |
| 4 | SWHH300F | 65000 plus 2800 for accessories. | 15% Subsidy of system cost released through bank subjected a maximum of Rs. 9750/- plus cost of essential plumbing and electrical wiring limited to Rs.2800/-. Avail interest subsidy from MNRE for 85 % of the loan to the extend of 2 % can be also availed. | 15% Subsidy of system cost released through bank subjected a maximum of Rs. 9750/- plus cost of essential plumbing and electrical wiring limited to Rs.2800/-. Avail interest subsidy from MNRE for 85 % of the loan to the extend of 5 %. | 100 % Subsidy of system cost released through bank subjected a maximum of Rs. 65000/- plus cost of essential plumbing and electrical wiring limited to Rs.2800/-Rs.6500 has to be set apart by Local self government for future maintenance |

| S.No | ITEM CODE | Estimated Cost(Rs.) | Subsidy Particulars | | |
|------|-----------|-----------------------------------|---------------------|--|--|
| | | | Domestic (All) | Commercial | Government(Institutional) |
| 5 | SWHO500F | 75000 plus 3150 for accessories. | NOT APPLICABLE | 15% Subsidy of system cost released through bank subjected a maximum of Rs. 11250/- plus cost of essential plumbing and electrical wiring limited to Rs. 3150/-. Avail interest subsidy from MNRE for 85 % of the loan to the extend of 5 %. | 100 % Subsidy of system cost released through bank subjected a maximum of Rs. 75000/- plus cost of essential plumbing and electrical wiring limited to Rs. 3150/-Rs.7500 has to be set apart by Local self government for future maintenance |
| 6 | SWHH500F | 103000 plus 3150 for accessories. | NOT APPLICABLE | 15% Subsidy of system cost released through bank subjected a maximum of Rs. 15450/- plus cost of essential plumbing and electrical wiring limited to Rs. 3150/-. Avail interest subsidy from MNRE for 85 % of the loan to the extend of 5 %. | 100 % Subsidy of system cost released through bank subjected a maximum of Rs. 103000/- plus cost of essential plumbing and electrical wiring limited to Rs. 3150/-Rs.10300 has to be set apart by Local self government for future maintenance |

| S.No | ITEM CODE | Estimated Cost(Rs.) | Subsidy Particulars | | |
|------|-----------|-----------------------------------|---------------------|--|---|
| | | | Domestic (All) | Commercial | Government(Institutional) |
| 7 | SWHO1000F | 170000 plus 3150 for accessories. | NOT APPLICABLE | 15% Subsidy of system cost released through bank subjected a maximum of Rs. 25500/- plus cost of essential plumbing and electrical wiring limited to Rs. 3150/-. Avail interest subsidy from MNRE for 85 % of the loan to the extend of 5 %. | 100 % Subsidy of system cost released through bank subjected a maximum ofRs. 170000/- plus cost of essential plumbing and electrical wiring limited to Rs. 3150/-Rs.17000 has to be set apart by Local self government for future maintenance |
| 8 | SWHH1000F | 206000 plus 3150 for accessories. | NOT APPLICABLE | 15% Subsidy of system cost released through bank subjected a maximum of Rs. 30900/- plus cost of essential plumbing and electrical wiring limited to Rs. 3150/-. Avail interest subsidy from MNRE for 85 % of the loan to the extend of 5 %. | 100 % Subsidy of system cost released through bank subjected a maximum of Rs. 206000/- plus cost of essential plumbing and electrical wiring limited to Rs. 3150/- Rs.20600 has to be set apart by Local self government for future maintenance |

| S.No | ITEM CODE | Estimated Cost(Rs.) | Subsidy Particulars | | |
|------|-----------|-----------------------------------|---------------------|--|--|
| | | | Domestic (All) | Commercial | Government(Institutional) |
| 9 | SWHO1500F | 255000 plus 4650 for accessories. | NOT APPLICABLE | 15% Subsidy of system cost released through bank subjected a maximum of Rs. 38250/- plus cost of essential plumbing and electrical wiring limited to Rs. 4650/-. Avail interest subsidy from MNRE for 85 % of the loan to the extend of 5 %. | 100 %Subsidy of system cost released through bank subjected a maximum of Rs. 255000/- plus cost of essential plumbing and electrical wiring limited to Rs. 4650/-. Rs25500 has to be set apart by Local self government for future maintenance |
| 10 | SWHH1500F | 304200 plus 4650 for accessories. | NOT APPLICABLE | 15% Subsidy of system cost released through bank subjected a maximum of Rs. 45630/- plus cost of essential plumbing and electrical wiring limited to Rs. 4650/-. Avail interest subsidy from MNRE for 85 % of the loan to the extend of 5 %. | 100 %Subsidy of system cost released through bank subjected a maximum of Rs. 304200/- plus cost of essential plumbing and electrical wiring limited to Rs. 4650/-. Rs.304200 has to be set apart by Local self government for future maintenance |

| S.No | ITEM CODE | Estimated Cost(Rs.) | Subsidy Particulars | | |
|------|-----------|-----------------------------------|---------------------|--|--|
| | | | Domestic (All) | Commercial | Government(Institutional) |
| 11 | SWHO2000F | 350000 plus 4650 for accessories. | NOT APPLICABLE | 15% Subsidy of system cost released through bank subjected a maximum of Rs. 52500/- plus cost of essential plumbing and electrical wiring limited to Rs. 4650/-. Avail interest subsidy from MNRE for 85 % of the loan to the extend of 5 %. | 100 % Subsidy of system cost released through bank subjected a maximum of Rs. 350000/- plus cost of essential plumbing and electrical wiring limited to Rs. 4650/-. Rs.35000 has to be set apart by Local self government for future maintenance |
| 12 | SWHH2000F | 396000 plus 4650 for accessories. | NOT APPLICABLE | 15% Subsidy of system cost released through bank subjected a maximum of Rs. 59400/- plus cost of essential plumbing and electrical wiring limited to Rs. 4650/-. Avail interest subsidy from MNRE for 85 % of the loan to the extend of 5 %. | 100 % Subsidy of system cost released through bank subjected a maximum of Rs. 396000/- plus cost of essential plumbing and electrical wiring limited to Rs. 4650/-. Rs.39600 has to be set apart by Local self government for future maintenance |

| S.No | ITEM CODE | Estimated Cost(Rs.) | Subsidy Particulars | | |
|------|-----------|-----------------------------------|---------------------|--|--|
| | | | Domestic (All) | Commercial | Government(Institutional) |
| 13 | SWHO3000F | 525000 plus 5150 for accessories. | NOT APPLICABLE | 15% Subsidy of system cost released through bank subjected a maximum of Rs. 78750/- plus cost of essential plumbing and electrical wiring limited to Rs. 2800/-. Avail interest subsidy from MNRE for 85 % of the loan to the extend of 5 %. | 100 % Subsidy of system cost released through bank subjected a maximum of Rs. 525000/- plus cost of essential plumbing and electrical wiring limited to Rs. 2800/-. Rs.52500 has to be set apart by Local self government for future maintenance |
| 14 | SWHH3000F | 591000 plus 5150 for accessories. | NOT APPLICABLE | 15% Subsidy of system cost released through bank subjected a maximum of Rs. 88650/- plus cost of essential plumbing and electrical wiring limited to Rs.5150/-. Avail interest subsidy from MNRE for 85 % of the loan to the extend of 5 %. | 100 % Subsidy of system cost released through bank subjected a maximum of Rs. 591000/- plus cost of essential plumbing and electrical wiring limited to Rs.5150/-. Rs.59100 has to be set apart by Local self government for future maintenance |

| S.No | ITEM CODE | Estimated Cost(Rs.) | Subsidy Particulars | | |
|------|-----------|----------------------------------|--|--|---|
| | | | Domestic (All) | Commercial | Government(Institutional) |
| 15 | SWHO100E | 19000 plus 2800 for accessories. | 15% Subsidy of system cost released through bank subjected a maximum of Rs. 2850/- plus cost of essential plumbing and electrical wiring limited to Rs.2800/-. Avail interest subsidy from MNRE for 85 % of the loan to the extend of 2 % can be also availed. | NOT APPLICABLE | 100 % Subsidy of system cost released through bank subjected a maximum of Rs. 19000/- plus cost of essential plumbing and electrical wiring limited to Rs.2800/-. Rs.1900 has to be set apart by Local self government for future maintenance |
| 16 | SWHO200E | 35000 plus 2800 for accessories. | 15% Subsidy of system cost released through bank subjected a maximum of Rs. 5250/- plus cost of essential plumbing and electrical wiring limited to Rs.2800/-. Avail interest subsidy from MNRE for 85 % of the loan to the extend of 2 % can be also availed. | NOT APPLICABLE | 100 % Subsidy of system cost released through bank subjected a maximum ofRs. 35000/- plus cost of essential plumbing and electrical wiring limited to Rs.2800/-. Rs.3500 has to be set apart by Local self government for future maintenance |
| 17 | SWHO300E | 45000 plus 2800 for accessories. | 15% Subsidy of system cost released through bank subjected a maximum of Rs. 6750/- plus cost of essential plumbing and electrical wiring limited to Rs.2800/-. Avail interest subsidy from MNRE for 85 % of the loan to the extend of 2 % can be also availed. | 15% Subsidy of system cost released through bank subjected a maximum of Rs. 6750/- plus cost of essential plumbing and electrical wiring limited to Rs.2800/-. Avail interest subsidy from MNRE for 85 % of the loan to the extend of 5 %. | 100 % Subsidy of system cost released through bank subjected a maximum ofRs. 45000/- plus cost of essential plumbing and electrical wiring limited to Rs.2800/-. Rs.4500 has to be set apart by Local self government for future maintenance |

| S.No | ITEM CODE | Estimated Cost(Rs.) | Subsidy Particulars | | |
|------|-----------|-----------------------------------|---------------------|---|---|
| | | | Domestic (All) | Commercial | Government(Institutional) |
| 18 | SWHO500E | 72000 plus 3150 for accessories. | NOT APPLICABLE | 15% Subsidy of system cost released through bank subjected a maximum of Rs. 10800/- plus cost of essential plumbing and electrical wiring limited to Rs.2800/-. Avail interest subsidy from MNRE for 85 % of the loan to the extend of 5 %. | 100 % Subsidy of system cost released through bank subjected a maximum of Rs. 72000/- plus cost of essential plumbing and electrical wiring limited to Rs.2800/-. Rs.7200 has to be set apart by Local self government for future maintenance |
| 19 | SWHO1000E | 155000 plus 3150 for accessories. | NOT APPLICABLE | 15% Subsidy of system cost released through bank subjected a maximum of Rs. 23250/- plus cost of essential plumbing and electrical wiring limited to Rs.2800/-. Avail interest subsidy from MNRE for 85 % of the loan to the extend of 5 %. | 100 %Subsidy of system cost released through bank subjected a maximum of Rs155000/- plus cost of essential plumbing and electrical wiring limited to Rs.2800/-. Rs.15500 has to be set apart by Local self government for future maintenance |

| S.No | ITEM CODE | Estimated Cost(Rs.) | Subsidy Particulars | | |
|------|-----------|-----------------------------------|---------------------|---|---|
| | | | Domestic (All) | Commercial | Government(Institutional) |
| 20 | SWHO1500E | 225000 plus 4650 for accessories. | NOT APPLICABLE | 15% Subsidy of system cost released through bank subjected a maximum of Rs. 33750/- plus cost of essential plumbing and electrical wiring limited to Rs.2800/-. Avail interest subsidy from MNRE for 85 % of the loan to the extend of 5 %. | 100 % Subsidy of system cost released through bank subjected a maximum of Rs. 225000/- plus cost of essential plumbing and electrical wiring limited to Rs.2800/-. Rs.22500 has to be set apart by Local self government for future maintenance |

MNRE capital subsidy for vendors not enjoying interest subsidy to the extent of Rs 1100 per m² for registered institutions and Rs 825 per m² for Commercial institutions

6. SOLAR DRIER MODELS FOR DOMESTIC, COMMERCIAL AND INSTITUTIONAL PURPOSES

6.1 Introduction

Low temperature solar technologies using green house effect are being used widely for drying of food material and several other products. Appropriately designed and constructed drying cabinets are used for the purpose. Dissemination of Solar Drier approved by the Total Energy Security Mission shall be based on a programme of capital subsidy . MNRE subsidy shall be also obtained on reimbursement. A corpus fund shall be created with 10% of the capital cost for post warranty maintenance, repair, and insurance. The corpus fund shall be maintained by the local self government separately. The specifications mentioned are base specifications which shall be fine tuned during accreditation process.

6.2 Estimated Cost

| Sl.no | Item code | Description | Estimated materials | Estimated cost(Rs) |
|-------|-----------|--|---|--------------------|
| 1 | SDOR70 | Solar Drier 70kg/batch for Fish / vegetables /green leaves | Plinth area 14sq.m, solar collector area of minimum 11.5 sq.m, loading capacity of 70 kg, optimum drying temperature 55-60°C | 192000 |
| 2 | SDHS70 | Solar Drier 70kg/batch for Fish / vegetables /green leaves | Plinth area 18sq.m, solar collector area of minimum 15.5 sq.m, loading capacity of 70 kg, optimum drying temperature 50-70 °C | 222000 |
| 3 | SDOR35 | Solar Drier 35kg/batch for Fish / vegetables /green leaves | Plinth area 7 sq.m,solar collector area 6 sq.m, loading capacity of 35 kg, optimum drying temperature 58-62°C | 150000 |
| 4 | SDM200R | Solar Tumble/wet cloth/ herbal/ rubber product drier 200kg(max) perbatch | Collector area 55 sq.m, Retrofitment model with 25kW backup power, operating temperature 60-80 °C | 500000 |

6.3 Subsidy Norms

| S.No | ITEM CODE | Estimated Cost | Subsidy Particulars | |
|------|-----------|----------------|--|---|
| | | | Domestic (All) & Commercial | Government(Institutional) |
| 1 | SDOR70 | 192000 | 15% Subsidy of system cost released through bank subject to a maximum of Rs. 28800/- Reimbursement of MNRE subsidy Rs.20125/- shall be additional | 100 % Subsidy of system cost released through bank subject to a maximum of Rs. 192000/- Rs.19200/- has to be provided by LB for future maintenance,space for installation has to be provided by beneficiary. MNRE subsidy obtained as reimbursement. |
| 2 | SDHS70 | 222000 | 15% Subsidy of system cost released through bank subject to a maximum of Rs. 33300/- Reimbursement of MNRE subsidy Rs. 20125/- shall be additional | 100 % Subsidy of system cost released through bank subject to a maximum of Rs. 222000/- Rs.22200/- has to be provided by LB for future maintenance, space for installation has to be provided by beneficiary. MNRE subsidy obtained as reimbursement. |
| 3 | SDOR35 | 150000 | 15% Subsidy of system cost released through bank subject to a maximum of Rs. 22500/- Reimbursement of MNRE subsidy Rs10500/- shall be additional | 100 % Subsidy of system cost released through bank subject to a maximum of Rs. 150000/- Rs.15000/-has to be provided by LB for future maintenance,space for installation has to be provided by beneficiary. MNRE subsidy obtained as reimbursement. |
| 4 | SDM200R | 500000 | 15% Subsidy of system cost released through bank subject to a maximum of Rs. 75000/- Reimbursement of MNRE subsidy Rs96250/- shall be additional | 100 % Subsidy of system cost released through bank subject to a maximum of Rs. 500000/- Rs.50000/-has to be provided by LB for future maintenance,space for installation has to be provided by beneficiary. MNRE subsidy obtained as reimbursement. |

7. SOLAR LIGHTING SYSTEMS FOR NON-ELECTRIC HOMES AND FOR STREET LIGHTING

7.1 Introduction

Dissemination of Solar lighting system shall be based on LED technologies approved by the Total Energy Security Mission. New generation LEDs of more than 80 lumen /watt shall be used. The solar street lighting system using LEDs shall be made available for institutional use where as solar home lighting systems and solar lanterns shall be limited to non-electric homes certified by the civil supplies department and the local government. Solar lantern and solar home lighting system will be limited to one unit per ration card. A corpus fund shall be created with 10% costs for community installations for post warranty maintenance, repair, and insurance. The corpus fund shall be maintained by the local self governments seperately. The specifications mentioned are base specifications which shall be fine tuned during accreditation process.

7.2 Estimated Cost

| Sl.no | Item code | Description | Estimated materials | Estimated cost(Rs) |
|-------|-----------|--|--|--------------------|
| 1 | SLLED | Multi purpose portable lantern for out doors as well as indoors with a connected load of 1 watt delivering up to 80/100 lumens and provided with multipurpose brightness | Compact lantern unit with solar panel 2.5watt, LED luminire, 6V 4.5 AH SMF battery, with charging socket, indicators, connecting wires etc. | 1100 |
| 2 | SHLS | Fixed type lighting system of 3 watt or mutiple levels in a group of three lights for small home | Three LED light units of 3watt, 2watt and 1 watt with 10 watt solar panel, 12V 7AH SMF battery with charge controller, connection wires etc. | 5000 |

| Sl.no | Item code | Description | Estimated materials | Estimated cost(Rs) |
|-------|-----------|---|--|--------------------|
| 3 | SSLS5 | Pole mounted street lighting system with LED which consumes 5 watt with solar panel,battery and all accessories. (Lumen out put 80-100 lumen/watt) | <ul style="list-style-type: none"> • Pole (5 Meters 2.5 inch diameter MS pole with either powder coated/silver painted/Galvanized) • Panel Structure (This is a supporting structure for the solar panel) • Battery Box (Plastic/MS suitable for out door applications with a lining for temperature control and corrosion proof painting.) • Luminary (Engineering plastic /MS powder coated luminary/Aluminum luminary) • Luminary fixing rod (powder coated/silver painted/Galvanized) • Cables (Adequately rated Electrical grade copper cables set) • Grouting Rods (to support the mounted pole) • Solar Module (Mono/Poly crystalline 12V solar panels of 12W) • Sealed maintenance free Battery 12V, 17 AH • Fixing clamps and hardware (all environment protected) | 9500 |
| 4 | SSLS10 | Pole mounted street lighting system with LED which consumes 10 watt with solar panel,battery and all accessories. (Lumen out put 80-100 lumen/watt) | <ul style="list-style-type: none"> ❖ Pole (5 Meters 2.5 inch diameter MS pole with either powder coated/silver painted/Galvanized) ❖ Panel Structure (This is a supporting structure for the solar panel) ❖ Battery Box (Plastic/MS suitable for out door applications with a lining for temperature control and corrosion proof painting.) ❖ Luminary (Engineering plastic /MS powder coated luminary/Aluminum luminary) ❖ Luminary fixing rod (powder coated/silver painted/Galvanized) ❖ Cables (Adequately rated Electrical grade copper cables set) ❖ Grouting Rods (to support the mounted pole) ❖ Solar Module (Mono/Poly crystalline 12V solar panels of 25W) | 19000 |

| Sl.no | Item code | Description | Estimated materials | Estimated cost(Rs) |
|-------|-----------|--|---|--------------------|
| | | | <ul style="list-style-type: none"> ❖ Sealed maintenance free Battery 12V, 26 AH ❖ Fixing clamps and hardware (all environment protected) | |
| 5 | SOLST | Double-Sided-Flashing Stays on more than 10 hours at night & 7 raining days Ultra Bright super LED's, Epoxy with L shaped screws and anti theft patent installation system | <p>Lamp LED X6 in Red, White, Yellow, Green & Blue.</p> <p>Solar Cell Storage Battery Material Dimensions Weight Flashing LED's Luminosity Visibility</p> <p>Mono Crystalline, 525mW,2.5V, 120mA NI-MH or Capacitor</p> <p>Aluminum & PC DIA 110 x 90 x 30 mm 398 g 60/min or 90/min or 120/min or as required >= 7500 mcd to 14000 mcd 1 km</p> | 2800 |

7.3 Subsidy Norms

| S.No | ITEM CODE | Estimated Cost(Rs.) | Subsidy Particulars | | | |
|------|-----------|---------------------|---------------------|----------|----------------------------------|-----------|
| | | | ST (BPL) | SC (BPL) | GEN(BPL)-Non electric homes only | Community |
| 1 | SLLED | 1100 | 100% | 100% | 90% | NA |
| 2 | SHLS | 5000 | 100% | 100% | 90% | NA |
| 3 | SSLS5 | 9500 | NA | NA | NA | 100% |
| 4 | SSLS10 | 19000 | NA | NA | NA | 100% |
| 5 | SOLST | 2800 | NA | NA | NA | 100% |

8. LIGHTING GADGETS

8.1 Introduction

Dissemination of lighting gadgets approved by the Total Energy Security Mission shall be based on high efficiency Light Emitting Diodes (LED) technology. The products shall be made available through accredited vendors to start with. Assembling by Community Development Societies (CDS) based micro enterprises is envisaged in the long run. For LED lantern kiosk, an essential spare parts kit and accessories for charging panel have been included in the cost. The specifications mentioned are base specifications which shall be fine tuned during accreditation process.

8.2 Estimated Cost

| Sl.no | Item code | Description | Estimated cost(Rs) |
|-------|-----------|---|-------------------------------|
| 1 | LIGTL | LED based light unit with 2 watt which delivers around 150 lumens with built in rechargeable battery that can be used for various outside tasks | 900 |
| 2 | LIGCS | LED based light unit which delivers around 20 lumens with built in rechargeable battery that can be used as study light for children that can be charged using Mobile charger. | 100 |
| 3 | LIGFL | LED based light unit with rechargeable battery which helps to identify fishing nets on the sea visible from 3 kms and is in red and yellow in color which floats on water and is hooked to the net under water | 500 |
| 4 | LIGVL | A set of 25 nos. grid charged LED based lantern model long lasting vendor lights which consumes 2 watt (150 lumens) with built in battery that lasts 20 plus hrs requiring recharge once in 4 to 5 days to be issued on a daily lease basis replacing kerosene wick lamps, kerosene hurricane lanterns and petromax lamps. Essential spares include batteries, luminire, charging sockets, control cards etc. | 22500+Spares cost of Rs.7500. |

8.3 Subsidy Norms

| S.No | ITEM CODE | Estimated Cost | Subsidy Particulars | | |
|------|-----------|---|--|--|--|
| | | | ST (BPL) | SC (BPL) | Gen (BPL) |
| 1 | LIGTL | 900 | 100% | 90% | 60% |
| 2 | LIGCS | 100 | 100% | 90% | 60% |
| 3 | LIGFL | 500 | 100% | 90% | 60% |
| 4 | LIGVL | 22500 + essential spares and accessories for Rs.7500. | Programme shall be linked to SGSY. Capital cost shall be met from SGSY. Essential spare and accessories made available as subsidy by the local government. | Programme shall be linked to SGSY. Capital cost shall be met from SGSY. Essential spare and accessories made available as subsidy by the local government. | Programme shall be linked to SGSY. Capital cost shall be met from SGSY. Essential spare and accessories made available as subsidy by the local government. |

9. PART, WOOD FIRED GASIFIER CREMETORIUM

9.1 Introduction

Cremation in Kerala is mostly through open burning. In certain urban locations electric crematoria exists. Both these options are very poor from an energy consumption and environmental point of view. Wood fired gasifier crematoria have come in as an alternative. This has been widely tried out in Tamil Nadu and has been found to economically very attractive.

9.2 Estimated Cost

| S.No | Item Code | Description | Estimated Materials and cost | | | | | | | | |
|---|------------|--|---|---|-----------|----------|------------|------------|-----------|---|----------|
| 1 | WBGCR | Down draft gasifiers with blowers, biomass feeders, furnace, chimney, scrubbers, gas engine, ash conveyor, cooling tower, water treatment plant etc. having an output of 2,50,000 kCal/h, input rating of 100 kg/hour, overall efficiency 70%, with rigorous ash pollution, water pollution, carbon dioxide emission standards. Minimum space of 180 sq. mtr for gasifier unit and furnace. Minimum space requirement for the project would be around 5 Are. | <p style="text-align: center;">Rough estimate</p> <table border="1"> <tr> <td>Civil work including cost of furnace based on design.</td> <td>Rs20 lakh</td> </tr> <tr> <td>Gasifier</td> <td>Rs.37 lakh</td> </tr> <tr> <td>Electrical</td> <td>Rs.1 lakh</td> </tr> <tr> <td>Contingencies, integration charges, AMC, statutory Clearances</td> <td>Rs9 lakh</td> </tr> </table> <p style="text-align: center;">Civil cost shall vary depending on location, number of furnaces etc.</p> | Civil work including cost of furnace based on design. | Rs20 lakh | Gasifier | Rs.37 lakh | Electrical | Rs.1 lakh | Contingencies, integration charges, AMC, statutory Clearances | Rs9 lakh |
| Civil work including cost of furnace based on design. | Rs20 lakh | | | | | | | | | | |
| Gasifier | Rs.37 lakh | | | | | | | | | | |
| Electrical | Rs.1 lakh | | | | | | | | | | |
| Contingencies, integration charges, AMC, statutory Clearances | Rs9 lakh | | | | | | | | | | |

9.3 Subsidy Norms

| S.No | ITEM CODE | Estimated Cost | Subsidy Particulars |
|------|-----------|-----------------|---|
| 1 | WBGCR | Rs. 67,00000.00 | 100% subsidy for installations of Local Governments. MNRE subsidy reimbursible. |

10. HOT BOX

10.1 Introduction

The HOT BOX is an improvement of the traditional hay box used in Kerala kitchen for energy conservation from time immemorial. Private vendors have come up with costly models for this which are excellent in finish and durability. However there are a variety of problems of ergonomics and flexibility around these products. Further, they are too expensive for the common man. Simple hot boxes with assured durability is proposed to be disseminated as a part of the

programme. The specifications mentioned are base specifications which shall be fine tuned during accreditation process.

10.2 Estimated Cost

| Sl.no | Item code | Description | Estimated cost(Rs) |
|-------|-----------|--|--------------------|
| 1 | HOT BOX | An insulated box made of thermocole with poly propylene jacket which can save 65 to 75 % of cooking fuel in the case of water based cooking , suitable for rice cooking. | 250 |

10.3 Subsidy Norms

| S.No | Item Code | Estimated Cost | Subsidy Particulars | | |
|------|-----------|----------------|---------------------|----------|-----------|
| | | | ST (BPL) | SC (BPL) | Gen (BPL) |
| 1 | HOT BOX | 250 | 100% | 90% | 60% |
