

Operational Guidelines for Capital Investment subsidy scheme for construction/expansion/modernization of cold storage and storages for Horticulture Products

Eligible Projects: Credit linked projects relating to Cold Storages including Controlled Atmosphere (CA) and their modernization are eligible for assistance under this scheme as per approved cost norms and pattern of assistance (component wise) given in Appendix - I & II

2. Eligible Organizations

A natural person, a group of individuals or a legal person (Partnership Firm, a Trust, Cooperative Society, a Society registered under Registration of Society Act, a company, self-help group, Farmer Producers Organization, Co-operative Marketing Federations, Agricultural Produce Marketing Committees, Marketing Boards/Committees, Municipal Corporations/ Committees, Agro-Industries Corporations may apply for assistance.

3. Procedure for filing application for In Principle Approval (IPA)

As per revised procedure effective from 01.04.2017, In Principle Approval (IPA) is mandatory for availing financial assistance under credit linked back-ended subsidy schemes of NHB. Before submitting application for IPA, applicants should carefully read and understand Operational Guidelines of the scheme and ensure that financial assistance sought is as per the notified procedure from time to time and they fulfill the eligibility criteria. Steps to be followed for making IPA application are as under:

A: Online Submission of Application Form for **IPA**:

It is mandatory to submit online IPA application in prescribed format available on Board's website: <http://nhb.gov.in> through link "Apply online and Track Status here".

With online application, it would be necessary to upload copy of Detailed Term Loan Sanction Letter of Bank/FI (In Principle Sanction Letter/Bank Consent letter not accepted) issued on or after 01.04.2017 for a new project/activity and a copy of the DD as proof of payment of application fee in case payment is not made online. Upon submission of form, applicants will get a computer generated unique code with acknowledgement for their application.

B: Submission of Application in Physical Form:

Applicant are advised to take a print of Online application and submit the self certified copy of the same to NHB, Head Office with all necessary enclosures as specified in Para 4 to the Head Office within 30 days from date of submission of online application on following address:

The Managing Director,
National Horticulture Board,
Plot No. 85, Sector-18,
Institutional Area, Gurugram (HR) – 122015

4. Documents to be enclosed along with IPA Application Form
 - a. Print out of online application duly signed by applicant.
 - b. Receipt of online payment or Demand Draft in original, as the case may be towards cost of Application Form & Scheme Brochure
 - c. Certified copy of Record of Rights over the piece of project land. In case of lease of land for the project, a certified copy of lease deed which should be registered at the time of submission of IPA application
 - d. Detailed Project Report (DPR) duly signed by promoter on each page of DPR
 - e. Certified copy of Detailed Term Loan Sanction letter of lending Bank/FIs
 - f. Certified copy of Caste Certificate issued by Competent Authority in case of SC/ST applicants
 - g. Certified copy of Aadhaar Card of applicant (s)
 - h. In case of Company/partnership firms (i) Certified copy of Company/Partnership registration certificate issued by Competent Authority, if applicable (ii) Certified copy of MoA/Bye Laws (iii) Certified copy of Board of Directors Resolution duly passed and authorizing signatory of application to apply for IPA (iv) Certified copy of latest Audit Report, if applicable
 - i. Duly signed copy of Basic Data Sheet (Available at NHB Website <http://nhb.gov.in>)
 - j. Plan & Layout of the proposed Cold Store unit in accordance to the Statutory Building By-Laws and BIS Building Codes & Standards duly approved by a Registered Architect and Structural Engineer. The drawings should detail out insulation type, thickness, and fixing methodology in sectional details.
 - k. Detailed Heat Load Calculation sheets of the proposed cold store unit in accordance to the prescribed Technical Standards and Guidelines duly approved by a Qualified Engineer
 - l. Detailed Technical Data Sheets of each equipment namely Compressors, Condensers, Cooling Towers, Air Cooling Units giving General Layout, Dimensions, Material of Construction, Rated Capacity, Operating Parameters and COP (please note that the Air Cooling Unit data sheet should include heat transfer area, fin spacing, no. of rows, air flow, face velocity, fan static, air throw, Fan Motor BkW/KW, fin spacing, etc) duly Certified by the respective equipment manufacturers with reference to the Relevant Codes & Standards. This will be evaluated by NHB empanelled technical expert to confirm compliance of notified Technical Standards

5. Cost of Application Form & Scheme Brochure:

Following is the structure for cost of application:-

Cost of Application	Demand Draft and Electronic Transfer category	Credit or Debit Card (VISA/MASTER)
For Projects having cost upto Rs 10.00 lakh	Rs 1,000/-	1000/- (plus applicable charges towards payment of gateway transaction fee)
For Projects having cost > 10 lakh and upto Rs 20 lakh	Rs 2,000/-	Rs 2000/- (plus applicable charges towards payment of gateway transaction fee)
For Projects having cost > 20 lakh and upto Rs 50 lakh	Rs 5,000/-	Rs 5000/- (plus applicable charges towards payment of gateway transaction fee)
For Projects having cost > 50 lakh	Rs 10,000/-	Rs 10,000/- (plus applicable charges towards payment of gateway transaction fee)

6. Mode of Fee Payment:

Fee can be paid on line during filing online application or it can be paid by Demand Draft in favour of National Horticulture Board payable at Gurugram (Haryana)

7. Procedure for Approval of IPA

The receipt & acknowledgment does not necessarily mean the approval of application, unless it is found to be feasible in all respects during the time of final scrutiny and evaluation. Applications received will be duly scrutinized and will be placed before Pre Project Approval Committee (PPAC) of Board. Applicants qualifying the eligibility criterion and meeting the approval of PPAC will be issued In Principle Approval (IPA) subject to availability of fund.

8. Time limit for Completion of project

Time limit for completion of the project would be maximum of 18 months period from the date of disbursement of the 1st installment of term loan, which may be extended by a further period of 6 months, if reasons for delay are considered, justified by the financial institution concerned and agreed to by NHB.

9. Intimation of completion of project and request to carry out joint inspection and process for approval of subsidy

Soon after completion of the project and disbursement of full term loan, the concerned FI/Bank shall submit final subsidy claim in prescribed format. Bank/FI must ensure that claims are filed within prescribed time limit of 18 month for the date of release of 1st installment of term loan. A Joint Inspection Team (JIT) consisting of representative from bank, NHB, State Hort./Agri. Department, empanelled expert of NHB will conduct joint inspection of the project after completion. Final amount shall be determined on the basis of the Joint Inspection Team and approval of appropriate committee of NHB. Subsidy will be released in Subsidy Reserve Fund Account (SRFA) to be adjusted with last installment of term loan not prior to 36 months.

10. Others

(i) Cost Norms

The cost norms are frequently misconstrued to reflect on market pricing of component item. It is to be noted that cost norms are intended to incentivize investment in certain areas and relates only to admissible item in a project. Cost norms are not to be understood as a funding mechanism for the projects. Detailed cost norms are given at Appendix I & II. Further, these norms are broad-based at national level and agnostic in relation to locality relevant specifics.

(ii) Title of the land

The title of the piece of land on which the project is proposed to be set up should be in the name of applicant in the capacity of owner or lessee for minimum period of 10 years. In case of land leased, lease deed it should be registered with the Authority like office of Sub-Registrar, etc. A latest copy of record of right showing this fact should be enclosed with the application. Mortgaged land shall not be treated at par with lease even if the credit institution might have considered so. Similarly, Power of Attorney given by owner of land in favour of applicant shall not qualify him for benefit under the scheme. In case of Partnership Firm's land may be hold either by Firm or jointly by its partners. In case land is owned by one of the partners, an undertaking by land owners would be required stating that he will not withdraw, sale or transfer his land during currency period of the project. In case of North East/Sikkim States, the Land Possession Certificate issued by Government to the applicant shall also qualify.

(iii) Protocol for Implementation of Technical Standards (in case of various types of Cold Storage)

Subject to provisions of Variation Clause, only those cold storage infrastructure having multi-chambers with technologies which are energy efficient with provision of thermal insulation, humidity controlled, advance cooling system, automation etc. having specification and standards approved by the Ministry. To ensure, compliance of notified standards, all projects will be subjected to technical scrutiny by NHB empanelled Technical appraisal agency.

11. General Conditions

- i. Please ensure to submit duly signed copy of online application along with Annexure signed on each page. Incomplete applications or applications received beyond time limit will be rejected
- ii. The decision of NHB with regard to eligibility and interpretation of the guidelines shall be final and binding on the beneficiaries and banks.
- iii. Mere issuance of IPA is not a guarantee of release of subsidy unless the project is implemented as per the scheme guideline.
- iv. Normative cost of various components shall be prescribed by NHB.
- v. Land area under project is either ownership/lease (Registered) hold right for prescribed number of years in the name of applicant and free from any burden such as mortgage to third party

- vi. Applicant has to intimate the Board before effecting any change of project land, plan and bank, etc. before claim of subsidy
- vii. Conformity of Technical Standards in case of Cold storages is essential.
- viii. If applicant is one or few of joint owners of project land then NOC from others co-owners be submitted.
- ix. Incomplete projects/NPA projects and default cases shall not be eligible for subsidy and subsidy will be called back in such cases.
- x. Any other pre and post inspection would be undertaken by NHB representative to find out the physical, financial and operational progress as and when required.
- xi. NHB reserves the right to recall any amount given under the scheme without assigning any reason thereof
- xii. Other operational instructions issued by NHB from time to time will be strictly followed.
- xiii. Credit component as means of finance of the project must be term loan linked with Aadhar from banking or non banking financial institutions. For credit linked projects, eligible subsidy amount will be capped at par with term loan sanctioned by the lending Banks/FI
- xiv. Components of projects not included in project proposal submitted by entrepreneur and /or not forming part of bank appraisal note is not eligible for NHB subsidy.
- xv. The participating banks will adhere to the norms of appraising the project regarding technical feasibility and commercial/financial viability before the release of term loan to ensure that the project is new, meets the guidelines of NHB, and the promoter has clear land title or lease hold right over the land.
- xvi. The participating banks should ensure insurance of the assets created under the project wherever required statutorily.
- xvii. A signboard displaying “Assisted by National Horticulture Board, Ministry of Agriculture & Farmers Welfare, Govt. of India” will be exhibited at the site.

12. Legal

Any Dispute will be subject to Jurisdiction of Gurgaon court only.

COST NORMS AND PATTERN OF ASSISTANCE UNDER MIDH FOR NATIONAL HORTICULTURE BOARD RELATED ACTIVITIES DURING XII PLAN

Capital Investment Subsidy Scheme for Construction/ Expansion/ Modernization of Cold Storage and Storages for Horticulture Products			
S No.	Item	Cost Norms*	Pattern of Assistance#
1	Cold storage units Type 1 - basic type with single temperature zone	NHB to take up projects with Capacity above 5000MT upto 10000MT as per following rates. <ul style="list-style-type: none"> • @ Rs. 8000/ MT for capacity upto 5000 MT • @ Rs. 7600/ MT for capacity between 5001 to 6500 MT. • @ Rs. 7200/MT for capacity between 6501 to 8000 MT. • @ Rs. 6800/MT for capacity between 8001 to 10000 MT. 	Credit linked back-ended subsidy @ 35% of the cost of project (50% in NE, Hilly States for subsidy on the pattern of HMNEH States and scheduled areas) for capacity above 5000 MT. In case of NE region, projects having capacity above 1000 MT are eligible
2	Cold Storage Unit Type 2 - with multiple temperature zones and basic material handling equipment.	NHB to take up projects with Capacity above 5000 MT upto 10000 MT as per following rates. <ul style="list-style-type: none"> • @ Rs.10000/ MT for capacity upto 5000 MT • @ Rs. 9500/ MT for capacity between 5001 to 6500 MT. • @ Rs. 9000/MT for capacity between 6501 to 8000 MT. • @ Rs. 8500/MT for capacity between 8001 to 10000 MT. 	Credit linked back-ended subsidy @ 35% of the cost of project (50% in NE, Hilly States for subsidy on the pattern of HMNEH States and scheduled areas) for capacity above 5000 MT. In case of NE region, projects having capacity above 1000 MT are eligible
3	Cold Storage Units Type 2 with add on technology for Controlled Atmosphere	NHB to take up projects with Capacity above 5000MT upto 10000MT as per Type 2 rates given above. <p>Additional Rs. 10,000/MT for add on components of controlled atmosphere technology.</p> <p>(Components details at Appendix-II)</p>	Credit linked back-ended subsidy @ 35% of the cost of project (50% in NE, Hilly States for subsidy on the pattern of HMNEH States and scheduled areas) for capacity above 5000 MT. In case of NE region, projects having capacity above 1000 MT are eligible
4	Technology induction and modernization of cold-chain	Max Rs 500.00 Lakh @ Rs.5000/MT for maximum capacity of 10000 MT. <p>(Component details at Appendix- II)</p>	Credit linked back-ended subsidy @ 35% of the cost of project (50% in NE, Hilly States for subsidy on the pattern of HMNEH States and scheduled areas) for capacity above 5000 MT

* Cost norms are indicative and refer to upper limit of cost for calculation of subsidy.

NE & Himalayan States refer to States in North East & Himalayan region covered under HMNEH scheme.

APPENDIX- II**Technology Add-on for CA and Modernization (Subject to maximum of Rs. 5.00 crore for CA equipment and Rs. 2.50 crore for Modernization)**

S. No.	Item	Description	Admissible Cost
A.	Add-on Technology for CA		
i	CA Generator*	Inclusive of sensors, pressure equalizing equipment, controls	Rs. 1.25 crore per unit, maximum 2 generators
ii	Specialized CA Doors*	Add-on specialization to storage doors for positive pressure chambers.	Rs. 2.5 lac per door, maximum 20 doors
iii	CA Tents [#]	Low cost enclosure of polyethylene PVC, Mylar or other impermeable body	As per original invoice, maximum 5 enclosures
iv	Programmed Logic Controller (PLC) equipment ^{#@}	Electronic and electrical logic controls for machinery & equipment.	50% of cost as per original invoice, maximum Rs 10 lakh
v	Dock Levelers ^{#@}	In existing or new storages	Max Rs. 7 lakh per unit, max 5 units
B.	Modernization		
i	Warehouse Development & Regulatory Authority (WDRA) / Negotiable Warehouse Receipt (NWR) system, equipment ^{#@}	Computers and printers & software for use with NWR of WDRA	100% of cost as per original invoice, maximum Rs. 2 lakh
ii	Specialized Packaging [#]	Automated packaging lines for fruits & vegetables with farm code labeling	100% of cost as per invoice, maximum Rs. 15 lakh per project
iii	High Reach Material Handling Equipment (MHE) ^{*@}	Specialized material Handling equipment	Rs. 17 lakh per unit, for max 2 units.
iv	Dock Levelers	In existing or new storages	Max Rs. 7 lakh per unit, max 5 units
v	Modernization of refrigeration [@]	For upgrading of evaporator system, compressor system	50% of cost as per original invoice, maximum Rs. 100 lakh @ Rs. 2500/MT

vi	Modernization of insulation [@]	For repair or modernizing of cold chamber insulation	50% of cost as per original invoice, maximum Rs.100 lakh @ Rs. 1500/MT
vii	Reefer Container [#]	Reefer container for use on existing chassis trailers	Max Rs. 6 lakh per 9MT (20 foot container)
Viii	Advanced Grader ^{**#@}	Computerized, Optical Grading Lines	100% of cost as per original invoice, max Rs. 75 lakh per line
ix	Stacking system ^{**#@}	Racking system Bins, Pallets	100% of invoice cost, max Rs 2000/MT
x	Retail Shelf [#]	Temperature controlled retail cabinets	Maximum Rs. 10 lakhs per establishment
xi	Alternate Technology ^{#@}	Vapour Absorption, Phase change material, Solar PV panels or Solar Thermal sys	100% of cost as per invoice, maximum Rs. 35 lakhs per project

Components categorization: * CA Add-ons:# Other Add-ons: and @ Modernization

Maximum permissible subsidy shall be subject to original invoices and in no case more than Rs. 7.50 crore, whichever is lower. For add-on technology, subsidy shall be provided as credit linked back ended at 35% of the capital cost.

Technology offers inherent value for operators and the admissible cost norms are designed to incentivize induction and not to serve as venture funding.

Any other components as maybe decided by Technical Committee when new technology or items that reduce carbon footprints are introduced. For individual unit components like insulation, graders, CA generator, solar panels - NCCD shall publish guidelines for use by appraising agency.

Check list of required documents for seeking In Principle Approval (IAP)

Name of Scheme: “Capital Investment Subsidy Scheme for Construction/Expansion/ Modernization of Cold Storages and Storages of Horticulture Produce”

Sr. No.	PARTICULARS	Yes/No
1.	IPA Application in prescribed format	
2.	Prescribed Cost of Application Form & Scheme Brochure	
3.	Certified copy of Record of Rights over the piece of project land. In case of lease of land for the project, a certified copy of lease deed which should be registered at the time of submission of IPA application	
4.	Detailed Project Report (DPR) duly signed by promoter on each page of DPR	
5.	Certified copy of Detailed Term Loan Sanction letter of lending Bank/FIs	
6.	Certified copy of Caste Certificate issued by Competent Authority in case of SC/ST applicants	
7.	Certified copy of Aadhaar Card of applicant (s)	
8.	In case of Company/partnership firms (i) Certified copy of Company/Partnership registration certificate issued by Competent Authority, if applicable (ii) Certified copy of MoA/Bye Laws (iii) Certified copy of Board of Directors Resolution duly passed and authorizing signatory of application to apply for IPA (iv) Certified copy of latest Audit Report, if applicable	
9.	Basic Data Sheet (Available at NHB Website http://nhb.gov.in)	
10.	Please attach a Plan & Layout of the proposed Cold Store unit in accordance to the Statutory Building By-Laws and BIS Building Codes & Standards duly approved by a Registered Architect and Structural Engineer. The drawings should detail out insulation type, thickness, and fixing methodology in sectional details	
11.	Please attach detailed heat load calculation sheets of the proposed cold store unit in accordance to the prescribed Technical Standards and Guidelines duly approved by a Qualified Engineer	
12.	Please attach Detailed Technical Data Sheets of each equipment namely Compressors, Condensers, Cooling Towers, Air Cooling Units giving General Layout, Dimensions, Material of Construction, Rated Capacity, Operating Parameters and COP (please note that the Air Cooling Unit data sheet should include heat transfer area, fin spacing, no. of rows, air flow, face velocity, fan static, air throw, Fan Motor BkW/KW, fin spacing, etc) duly Certified by the respective equipment manufacturers with reference to the Relevant Codes & Standards.	

National Horticulture Board

IN PRINCIPLE APPROVAL (IPA) APPLICATION FORM

Name of Scheme: “Capital Investment Subsidy Scheme for Construction/Expansion/ Modernization of Cold Storages and Storages of Horticulture Produce”

(To be signed on each page by the applicant)

Date of application _____

Application No. -----

(To be generated online)

Affixed duly
signed
PHOTO here

To
The Managing Director
National Horticulture Board
Plot No. 85, Sector-18, Institutional
Area, Gurgaon-122015 (Haryana)

A. BENEFICIARY/ENTREPRENEUR

1.	Name				
	Permanent Address				
	Postal Address				
	Mobile				
	Fax				
	Email				
2.	Constitution	Individual /Company/Joint Promoters/ Partnership Firm/ Trust/Cooperative Society/ a Society registered under Registration of Society Act/ self-help group/ Farmer Producers Company			
3..	In case of Individual Please (√) Category	SC	ST	OBC	EX-SERVICE MAN
4.	Gender (Male/Female)				Age:
5.	Aadhaar Number				
6.	Occupation				

Signature of applicant

7.	Promoters/beneficiary profile	
	i. Principle Promoter/Beneficiary	
	ii. Others	
	iii. In case of companies	
	• Registration number & date of registration	
	• Registering authority	
	• Act under which Registered	
	• Authorized share capital	
	• Paid up share capital (by end of last financial year)	
• Reserve & Surplus (by end of last financial year)		

B. PROPOSED ACTIVITY

1.	Name of the Project	
2	Location	
	Survey/Khasra No.	
	Village	
	Taluka	
	District	
	State	
3.	Component	Cold Storage/CA Storage/Modified Storage/ Onion Storage/ Modernization of Existing Storage
4.	(A) EXISTING CAPACITY, IF ANY CHAMBER (S) CAPACITY IN MT	
	Chamber- 1	
	Chamber- 2	
	Chamber -3	
	Chamber -4	
	Total Capacity	
	(B) PROPOSED NEW CAPACITY CHAMBER (S) CAPACITY IN MT	
	Chamber- 1	
	Chamber- 2	
	Chamber -3	
	Chamber -4	
	Total Capacity	
	(C) CHAMBER/CAPACITY PROPOSED CHAMBER (S) CAPACITY IN MT FOR MODERNIZATION	
	Chamber- 1	
	Chamber- 2	
	Chamber -3	
	Chamber -4	
	Total Capacity	
	(D) JUSTIFICATION FOR ADDITIONAL CAPACITY/MODERNIZATION ON	

Signature of applicant

B-II. WHETHER PROPOSED ACTIVITY IN APPLICATION IS

Sr. No	PARTICULAR	Yes/No
(a)	Completely a new activity (if No, the details of pre-existing activity or any component thereof included in the application should be indicated clearly)	
(b)	Whether any subsidy has been availed for the proposed proposal/ activity or component thereof from Central Govt. or any of its Agencies. (if YES, please indicate clearly in detail)	

C. PROPOSED PROJECT COST (COMPONENT-WISE)

Sr. No	Component/Items	Proposed Cost (Amount in Rs.)
1.	Cost of civil constructions	
2.	Cost of plant & machinery	
3.	Other components, if any (pl. specify)	
	Total	

D. PROPOSED MEANS OF FINANCE

Sr. No	Particulars	Proposed Amount (Rs. in lakh)
(i)	Promoter's share	
(ii)	Bank/FI term loan	
(iii)	Proposed subsidy from other sources, if any a) From State Govt. b) From Central Govt. other than NHB	
	Total	

(Note: Unsecured loans from friends/relatives will not be treated as equity)

Sr. No	Particulars	Proposed Amount (Rs. in lakh)
1.	Expected back-ended subsidy from NHB	

(NHB subsidy will be considered as per Board's guidelines and applicable cost norms, if found in order, but not guaranteed)

E. EXISTING STATUS OF PROJECT

(Please give details about the activities of the proposed project already completed at the time of submission of application of In Principle Approval (IPA)

.....

F. Whether any assistance in the form of soft loan and subsidy has been availed by the beneficiary earlier from the National Horticulture Board? If yes, give details thereof.

.....

G. Whether any subsidy has been availed from the Board, other Central Govt. organization or State Govt. for the same activity or component thereof on same piece of land, Khasra no. etc.?

.....

Signature of applicant

DETAILS OF SUBSIDY, IF AVAILED FROM:

Sr. No	Name of Organization	Subsidy amount (Rs.)
(a)	MoFPI	
(b)	APEDA	
(c)	NHM	
(d)	HMNEH/Technology Mission	
(e)	RKVY	
(g)	Others	

H. NAME OF THE BANK/FI FROM WHERE THE TERM LOAN HAS BEEN SANCTIONED (Please enclose a certified copy of detailed Term Loan Sanction Letter of Bank/FI).

Sr. No.	Particulars	Details to be given
a)	Name of Bank	
b)	Branch	
(c)	Bank Code	
(d)	Date & Amount of sanction of Term Loan	
(e)	Details of release of term loan, if any:	
(f)	Whether Term Loan is linked with Aadhaar Number* – Yes/ No	

* Aadhar linkage is mandatory

I. DETAILS OF LAND

Sr. No.	Particulars	Details to be given
I)	Whether own land (ancestral/purchased):	
II)	Whether leased If so, how many years lease	
iii)	Whether lease/tenancy/contract is registered with the Competent Registration Authority	

(Copy of the proof of land title be enclosed)

J. IMPLEMENTATION SCHEDULE OF PROPOSED ACTIVITY

Sr. No.	Particulars	Details to be given
i)	Proposed month for Start of project	
ii)	Proposed month for Civil Construction	
iii)	Proposed month for Installation of plant & machinery	
iv)	Expected month of Completion of project	

K. MARKETING OF PRODUCE

Signature of applicant

L. COST OF APPLICATION FORM/SCHEME BROCHURE AND MODE OF PAYMENT WILL BE AS UNDER:

Sr. No.	Cost of project	Amount of Fee	Mode of Payment
1.	Projects costing up to Rs. 10.00 lakh	Rs. 1000/-	Demand Draft drawn in favour of National Horticulture Board payable at Gurgaon (Haryana)
2.	Projects costing above Rs. 10.00 lakh and up to Rs. 20.00 lakh	Rs. 2000/-	
3.	Projects costing above Rs. 20.00 lakh and up to Rs. 50.00 lakh	Rs. 5000/-	
4.	Projects costing above 50.00 lakh	Rs. 10000/-	

The above prescribed cost of application form and brochure will be non- refundable.

M. DETAILS OF INSTRUMENTS/DEMAND DRAFT

Name of the issuing Bank Branch	Demand Draft No.	Date	Amount(Rs.)

N. NAME & ADDRESS OF CONSULTANT WHO PREPARED THE PROJECT REPORT (DPR).

SELF DECLARATION

I hereby declare and certify that:-

1. The information/ contents as above furnished by me/us in the application are true to the best of my/our knowledge & belief and nothing material has been concealed. In case, any information furnished in the application is found false, my/our application may be rejected out rightly at any stage by the Board.
2. That I have thoroughly read and examined notification F. No. 45/64/2010-Hort., dated 15.05.2015 for prescribed technical standards w. e. f. 15.05.2015
3. That I accept and undertake that the Technical Scrutiny of the documents by NHB or its empanelled agencies shall not in any way obviate the responsibility of the Promoter/deponent , to scrutinize his project and insure that it invariably complies to the prescribed technical standards w.e. f. 15.05.2015 vide notification F. No. 45/64/2010-Hort., dated 15.05.2015.

Verified that the information given in the application form is true to the best of my knowledge and belief and nothing material has been concealed.

(Signature of the Applicant)

Name & Address :

Mobile No :

Telephone/Fax No.

Email :

Place:

Date :

Enclosures:

1. Print out of online application duly signed by applicant.
2. Receipt of online payment or Demand Draft in original, as the case may be towards cost of Application Form & Scheme Brochure
3. Certified copy of Record of Rights over the piece of project land. In case of lease of land for the project, a certified copy of lease deed which should be registered at the time of submission of IPA application
4. Detailed Project Report (DPR) duly signed by promoter on each page of DPR
5. Certified copy of Detailed Term Loan Sanction letter of lending Bank/FIs
6. Certified copy of Caste Certificate issued by Competent Authority in case of SC/ST applicants
7. Certified copy of Aadhaar Card of applicant (s)
8. In case of Company/partnership firms (i) Certified copy of Company/Partnership registration certificate issued by Competent Authority, if applicable (ii) Certified copy of MoA/Bye Laws (iii) Certified copy of Board of Directors Resolution duly passed and authorizing signatory of application to apply for IPA (iv) Certified copy of latest Audit Report, if applicable

9. Signed copy of Basic Data Sheet (Available at NHB Website <http://nhb.gov.in>)
10. Plan & Layout of the proposed Cold Store unit in accordance to the Statutory Building By-Laws and BIS Building Codes & Standards duly approved by a Registered Architect and Structural Engineer. The drawings should detail out insulation type, thickness, and fixing methodology in sectional details.
- 11.** Detailed Heat Load Calculation sheets of the proposed cold store unit in accordance to the prescribed Technical Standards and Guidelines duly approved by a Qualified Engineer
12. Detailed Technical Data Sheets of each equipment namely Compressors, Condensers, Cooling Towers, Air Cooling Units giving General Layout, Dimensions, Material of Construction, Rated Capacity, Operating Parameters and COP (please note that the Air Cooling Unit data sheet should include heat transfer area, fin spacing, no. of rows, air flow, face velocity, fan static, air throw, Fan Motor BKW/KW, fin spacing, etc) duly Certified by the respective equipment manufacturers with reference to the Relevant Codes & Standards. This will be evaluated by NHB empanelled technical expert to confirm compliance of notified Technical Standards

National Horticulture Board

PART-2

BASIC DATA SHEET FOR COLD STORAGEES

C S Type 1

i) Cold chamber sizing and Capacity

Please enclose Sketch with plan layout and section showing the storage chamber.

Details	Chamber 1	Chamber 2	Chamber 3	Chamber 4	Chamber 5
Temp. Zone & relative Humidity conditions					
Name of Produce					
Number of platform per chamber					
Type of platform used	Wooden grating	Steel grating			
Dimensions of CS chambers in each group (L x W x H) m					
Storage Capacity of each chamber in tons					
Storage unit used (Bags, crates, carton, bulk heap etc.)	Bags	Bags	Bags		
Total number of storage unit					
Weight per storage unit					
Heat load per Chamber (KW)					
Any other information	Describe other information like bulk heap storage and number of cooling tunnels, total cooling load per chamber.				

Figures/data are as examples for user
Each chamber is a common temperature zone

ii) Handling Area

Details	Dimensions	Temp °C
Describe Handling, receiving area (covered, open shed	Handling area Dimensions (LxWxH)m	Expected temperature in handling area
Describe Loading / Unloading platform	Dimensions (LxWxH)m of the loading and unloading platforms	Expected temperature in Loading platform

Loading and handling area may be common in some storage designs

iii) Facility covered Areas

Cold Storage Area and height	Total floor area in m ² (sum of all storage chambers internal area)
Machine room area and height	Dimensions in metres
Generator room area and height	
Admin. Block area and height	

Signature of Consultant

Signature of applicant

iv) Building & Construction Details

Type of building construction	Specify if building is with RCC civil construction or with pre-engineered structural steel construction with insulated panels
External walls / Internal walls / Partition walls of cold chambers	Specify whether the walls are constructed with civil building with insulation slabs fixed in the walls or composite panels used
Specification of Roof / Ceiling	Specify ceiling is construction – civil work with insulation slabs fixed or composite panels used
Lighting fixtures in cold chambers	Specify use of special lights and fixtures with weather protection
Specification in handling / External compound areas	Materials used in construction of handling, external compound area
Others	Describe if chambers are divided into vertical temperature zones (RCC floors, insulated vertically)

v) Insulation and Vapour Barrier

Type of Insulation	External Wall	Internal Wall	Ceiling / Roof	Floor
Specification of Insulation material	Describe the type of material used for insulation of walls/ ceiling and partition and floor			
Specification of composite panels	Describe the type of composite insulated panels used for insulation			
Relevant IS code	State applicable IS codes applicable for the specification of the below characteristics of the insulation material used			
Thermal conductivity (K value) at +10 °C (mean temperature)	Indicate the heat transfer ability of the product in W/m.k at 10°C mean temperature			
U - Value	Provide the U-value of the insulation			
Thermal diffusivity (m ² / sec.)	Indicate heat transfer relative to the storage of thermal energy			
Vapour barrier specification	Describe type of material and thickness of the vapour barrier used			
Total insulation thickness	Indicate total insulation thickness and number of layers			
Specification on cladding	Describe external finish/ cladding material			
Locking / fixing & sealing System in case of Metal Skin composite Panels	Cam lock system for discontinuous panels/ tongue and groove joints for continuous composite panels (Single or double)			

vi) Cold Store Doors & Air / Strip barriers or curtains

Description	Details
No. of doors per chamber	Quantity of number of insulated doors
Type: Hinged / Sliding / rolling	Type of Door movement and operation
Size of door opening	Internal clear opening dimensions (W X H)
Insulation material	Type of insulation along with its 'U-value'
Thickness of insulation	Provide the thickness of insulation in millimeter
Type of skin	Galvanized/Stainless steel/GRP
Provision of Strip curtains / Air curtains – nos.	Strip or Air curtains used- number and dimension (W x H)
Internal Emergency Door release	Internal release mechanism for emergency opening even when locked form outside or push button type alarm located inside the cold chambers near the door

Signature of Consultant

Signature of applicant

vii) Heat Load Estimation Inputs

Product Storage Condition (Temp. RH & CMH)	List product wise storage temperature in °C, relative humidity required in %, Air circulation rate in CMH
Loading Period	Total no. Of days/weeks for completion of product loading in a season
Max. Storage period	Product wise maximum storage period planned in weeks/months
Product loading temperature.	Product loading temperature during the peak season in°C
Loading rate / day	Daily throughput in metric tons which enters into the cold storage
Pull down period	Time in hours to bring initial product temperature to storage temperature
Estimated daily unloading rate from each cold chamber	Provide the unloading rate in MT per day
Ante room cum Staging area conditions	List temperature to be maintained in °C
CO ₂ Concentration control	List recommended range of CO ₂ concentration in PPM
Fresh air changes.	Number of air changes per day considered
Brief description of fresh air ventilation system.	Capacity of Fresh air fans for replenishment of fresh air into each of the cold chambers
Explain Heat recovery system if used	Description of heat recovery system, recommended efficacy, type of system, cross heat exchange used

viii) Heat Load calculation of Cooling System – Summary

Ambient Conditions Dry Bulb temperature (Summer)	Peak conditions based on summer
Building dimensions : Total capacity of the storage: Number of the chambers	Provide the Dimensions of the building, total capacity of storage and number of chambers.

Note: please attach additional heat load estimation for, as applicable depending up on, different group of commodity planned

Refrigeration Load		During Loading (kW)	During Holding (kW)
Transmission Load (kW)		Heat transferred through walls, ceiling and floor due to difference in outside and inside temperature	
Product Load (kW)		Heat transferred from the product due to difference in product temperature at the time of loading and storage room temperature	
Internal load (kW)	Lighting load	Internal heat generated due to lights in the cold room	
	Occupancy load	Heat transferred due to human activity within the cold room	
Infiltration load (kW)		Heat transferred from outside air during door opening	
Ventilation /Fresh Air (kW). Refurbishing load		Heat transferred fresh air replenishment	
Equipment load Evap. Fan motors MHE etc. (kW)		Total Heat transferred from various above sources in a day	

Compressor Operation Hours / day	Pull Down Period	Indicates compressor running hrs. During pull down time of the product in a day	
	Holding period	Indicates compressor running hrs after the product reaches the room storage temperature	
	Defrosting period	Duration of Defrosting in a day	
Total Refrigeration Description (kWh)		Peak Period(kWh)	Holding period(kWh)

Signature of Consultant

Signature of applicant

COOLING SYSTEM DESIGN DETAILS

ix) Cooling System Configuration : Mechanical Refrigeration

Type of Refrigerant	Provide the technical name of the refrigerant
Total Refrigeration System Capacity	Provide the total refrigeration capacity in KW.
Type of System	Direct expansion. Gravity feed/ overfeed/ secondary pump
Type of compressors	Reciprocating / screw/ scroll
Type of capacity control	Step less/ step in / auto unloading of cylinders
Specify Unloading steps in percentage	Screw compressor from 10 to 100% Reciprocating from 20 to 100%
Type of condensers	Atmospheric/ Evaporative/ water cooled/ air cooled.
Cooling Towers (if applicable)	Natural draft/ induced draft
Type of Evaporator / Air cooler	Ceiling of floor mounted- induced draft/ forced draft/ dual discharge
Type of defrosting	Air/ water/ electric/ hot gas
Humidification- System &Control	Describe the method of humidification and controls used. If using dehumidifier explain here

REFRIGERATION EQUIPMENT DETAILS

x) Compressor / Rack Detail

Compressor / Rack Type Make & Model	Qty.	Comp RPM	Operating Parameters SST / Cond. Temp(°C)	Refrigeration Capacity (kW)	Power Consumption (kW)	Total connected motor (kW)	Remarks Working / stand by
					Full load: Part load:		

xi) Condenser details

Condenser Type Make & Model	Qty.	Operating Parameters Cond. Temp (CT) WBT water in/out temp. °C	Condenser Heat rejection Capacity (kW)	Electric fan/ Pump Motor Rating (kW)	Total Electric power (kW)	Remarks Working / stand by

xii) Cooling Tower Details (If Applicable)

Cooling Tower Type Make & Model	Qty.	Operating Parameters DB & WB water Temp. in / out (°C)	Cooling Tower Capacity (kw)	Fan & Pump Capacity (CMH, LPS) & Motor kW	Total Electric power (kW)	Remarks Working / stand by

xiii) Pressure vessels

Description	Type : Horizontal / Vertical	Refrigerant	Operating Temperature & Pressure	Construction Shell , Dish ends & Nozzles	Total refrigeration load	Holding Volume
Low Pressure						
High Pressure						

Note : The design & Testing of the pressure vessel should comply with ASME Sec. VIII Div. 1

Signature of Consultant

Signature of applicant

xiv)Evaporators / Air cooling Units (ACU)

ACU Type Make & Model	Nos.	Operating Parameters Evap. (SST) & TD (°C)	Cooling Capacity (kW)	Air Flow(CMH)& Face velocity (m/s)	Material of Coil Fins & Tubes	Fin Pitch mm.	Total fan electric Power (kW)

*TD - Temperature difference between Evap. (SST) °c &return Air (at coil inlet).

Note: please attach detailed technical performance data sheets of each equipment namely compressors, Condensers, Cooling Towers, Air Cooling Units giving General layout and dimensions duly certified by the respective equipment manufacturers with reference to the relevant codes & Standards.

xv) Electrical Installation

Total connected Load	Provide the total connected electrical power in kW
Estimated power requirement at Peak Load Period	Provide the maximum power consumed during peak demand in kW
Estimated power requirement at Pull Down Load Period	List the power consumed during holding period in kW
Estimated power requirement Lean Load Period	List the power consumed during lean period in kW
Capacity of Transformer	Provide the rate capacity of the transformer in kVc
Size of capacitor	Provide the size of capacitor bank for power factor correction & their operation
Make & capacity of stand by D.G. Sets	Provide the make and rated capacity of the generator in KVA

xvi) Material Handling Procedure

Procedure	Brief Description
Material handling procedures & Equipments	Describe the details of product movement inside the cold storage and equipment used
Capacity of mechanised belt conveyor if any rating of Motor	Electric motor capacity in KW connected for lifts/ hoists/ conveyors etc.
Any other device please Specify	

Attach a Plan & Layout of the proposed Cold Store unit approved by a registered Architect.

xvii) Safety Provisions.

Include machine room ventilation system for self-containing

Fire Fighting equipment installed as per Fire safety standards of State Fire Department.	Yes/No
Handling measures for Refrigerants & Leaks installed	All fire-fighting equipment complied as per state fir-fighting department
Safety devices - LP/H P cut outs, safety valves, shut off valves etc. installed	Specify the sensor types and alarm system used, if any
Emergency lighting in Cold chambers & other areas installed	
lighting Arrestor Installed	
Any other Safety Provisions (describe)	

Signature of Consultant

Signature of applicant

xviii) Energy Saving Equipment & Measures

Details of Energy Saving Devices	Brief Description and savings

Light Fixtures	Type of light fixtures-CFL/LED
Natural Lighting for general areas	Specify the provision for natural lighting is included
VFD / Electronic Technology for fans / compressors	Control of fan motors speed using variable frequency drives or by electronic technology in 2 steps fan for evaporators
Refrigerant Controls and Automation	Automation controls used to save energy for optimizing the performance of the refrigeration system
Air Purger	List the type and operation of air purger
Power Factor Controller	Measure of efficient use of electrical power in the connected system
Energy recovery	Provide use of energy recovery for ventilation system
PLC Control & Data Acquisition	Automation for monitoring and control of the parameters and refrigeration plant
Any Other Component.	Describe the monitoring and control used such as CO2 scrubbers, odor control, ozonisers, ethylene scrubber etc.

xix) Estimated Performance Parameters of Proposed Cold Store

Parameters	Peak period	holding Period
Coefficient Of Performance (COP) of the Cold Store Unit	COP of the cold storage during peak and holding period	
Power consumption (kWh / Day)	Power consumption during peak and holding period	
Prevailing Electricity Cost	Provide prevailing electricity cost in Rs/kWh	

xx) Brief description of any other technologies or infrastructure used

Reefer trucks operated (if any)	
Specialized packaging lines (if any)	
PLC Automation (if any)	
Dock Levellers systems (if any)	
Alternate energy options (if any)	
Modern Pack-house (if any)	
Others	

Append details in separate data sheets for 'add on components' if also applying for these components.

All mandatory rules & regulations (BIS, ISO, IS etc.) relevant to the items must be complied with.

**Place
Date**

Place
Date.....

**Signature and
Name of Applicant with seal**

**Name in Capital Letters
Signature & Seal of Consultant
who has designed Cold Storage
and is going to provide supervision
during Construction and commissioning**

BASIC DATA SHEET FOR COLD STORAGEES
C S Type 2

i) Commodity Storage Requirements

Description	Details
Type of Commodities/ Produce	Provide name of the produce types to be stored
Total Number of chambers	

ii) Cold chamber sizing and Capacity

Please enclose Sketch with plan layout and section showing the storage chamber.

Details	Chamber 1 Group 1	Chamber 2 Group 2	Chamber 3 Group 3	Chamber 4 Group 4	Chamber 5 Group 5
Storage Condition Temp. & Relative Humidity	0 to 2 ⁰ C 90-95% RH	0 to 2 ⁰ C 95-100% RH	0 to 2 ⁰ C 65-75% RH	4 to 5 ⁰ C 90-95% RH	10 to 12 ⁰ C 85-90% RH
Product types					
Number of chamber per group					
Dimensions of chambers in each group (L x W x H) m					
Storage Capacity of each chamber group (cubic meters)					
Storage unit (Pallets, bulk, Bins, cartons, etc.)	Pallets	Bins	Bins	Pallets	
Stacking system used	Nil	Nil	Over stack bin	Racking	
Total Heat load calculated per chamber group (KW)					
Total Refrigeration capacity per chamber group (kw)					

Figures/data are as examples for user
Each chamber is a common temperature zone

iii) Enclosed Ante Room & Handling Area

Details	Information	Temp °C
Ante room/ Handling area (LxWxH)m	Refrigeration kw load	Temperature maintained in °C in ante room and handling area
Refrigeration Load	Provide the refrigeration load in kW	
Number of Access Doors	List number and dimension of main doors to ante room enclosure	
Dock leveller system	Provide the details of protected loading unloading platforms if used.	

Loading and handling area may be common in some storage designs

Signature of Consultant

Signature of applicant

iv) Facility covered Areas

Cold Storage Area and height	Total floor area in m ² (sum of all storage chambers internal area)
------------------------------	--

Ante room area	Total floor area in m ² of ante room (handling area)
Receiving room area and height	
Machine room area and height	
Generator room area	
Admin. Block area and height	

v) Building & Construction Details

Type of building construction (load bearing construction)	Specify whether building is with RCC civil construction or pre-engineered structural steel construction with insulated panels
External walls / Internal walls / Partition walls of cold chambers	Specify whether the walls are constructed with civil works with insulation slabs fixed in the walls or pre-insulated composite panels used
Roof / Ceiling construction	Describe external roof construction & installation method of ceiling insulation
Lighting fixtures in cold chambers	List use of special lights and fixtures with weather protection
External/ Compound areas	Describe construction of external and compound areas including parking area provided
Others	Describe if chambers are divided into vertical temperature zones (RCC floors, insulated vertically or common)

vi) Insulation and Vapour Barrier

Type of Insulation	Wall	Ceiling / Roof	Floor
Specification of Insulation material	Describe the type of material used for insulation of walls/ ceiling and partition and floor		
Specification of composite panels	Describe the type of composite insulated panels used for insulation of walls and ceilings		
Relevant IS code	State applicable IS codes applicable for the specification of the below characteristics of the insulation material used		
Thermal conductivity (K value) at +10 °C (mean temperature)	Indicate the heat transfer ability of the product in W/m.K at 10 ⁰ C mean temperature		
U - Value	Provide the U-value of the insulation		
Thermal diffusivity (m ² / sec.)	Indicate heat transfer ability relative to the storage of thermal energy		
Vapour barrier specification	Describe type of material and thickness of the vapour barrier used		
Specification on cladding	Describe external finish/ cladding material if any		
Locking / fixing & sealing System in case of Metal Skin composite Panels	Cam lock system for discontinuous panels/ tongue and groove joints for continuous composite panels (Single or double)		

Signature of Consultant

Signature of applicant

vii) Storage Chamber insulation & Details

Chamber Number	Ceiling thickness (mm)	External wall thickness (mm)	Internal wall thickness (mm)	Floor insulation thickness	Internal Dimensions (LxBxH)m

				(mm)	
1	150 mm	150 mm	80 mm	100 mm	
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					

viii) Cold Store Doors & Air / Strip barriers or curtains

Chamber Number	Number of Doors	Door Opening (WxH)m	Thickness (mm) & 'U-Value'	Strip curtain or air curtain	Opens to (ante room or outside)
1	1	2.7 x 4.0	100 mm, 0.4	Strip	Ante-room
2					
3					
4					
5					

ix) Heat Load Estimation Inputs

Product Storage Condition	List storage temperature in °C, relative humidity required in %, Air circulation rate in CMH
Daily Door Opening	Estimated number of time and period doors opened for daily operations
Estimated mass of products to be loaded and unloaded daily	Provide the rate in MT per day. Assume that product is within 5°C of storage temperature
Ante room area conditions	Temperature to be maintained in °C
Special provisions	Describe other conditions maintained for improving the quality of the stored products (humidity, CO ₂ level, CA systems, etc.)

x) Fresh Air Ventilation System

Fresh air changes	Provide number of air changes per day considered in a cold room
Brief description of fresh air ventilation system	Capacity of fresh air fans for replenishment of fresh air into each of the cold chambers
CO ₂ Concentration Control Range	Recommended range of CO ₂ concentration maintained in PPM
Monitoring & Control instrument	Describe the monitoring and control instrument used
Explain heat recovery system, if used	Description of heat recovery system, recommended efficacy, type of system, cross heat exchange, if used

Signature of Consultant

Signature of applicant

xi) Heat Load calculation of Cooling System – Summery

Ambient Conditions Dry Bulb temperature (Summer)	Peak conditions based on summer
Building dimensions :	Specify the dimensions of the building, total

Total capacity of the storage: Number of the chambers :	capacity of storage and number of chambers.
--	---

Note: please attach additional heat load estimation for, as applicable depending up on, different group of commodity planned

Refrigeration Peak Load in kW (for storage chambers)		
Transmission Load (kW)	Heat transferred through walls, ceiling and floor due to difference in outside and inside temperature	
Product Load (kW)	Heat transferred from the product due to difference in product incoming temperature and storage room temperature	
Internal load (kW)	Lighting load	Internal heat generated due to lights in the cold room
	Occupancy load	Heat transferred due to human activity within the cold room
Infiltration load (kW)	Heat transferred from outside air during door opening (use ante room temperature when opening into enclosed ante room)	
Ventilation /Fresh Air (kW). Refurbishing load	Heat transferred through fresh air entering the cold room	
Equipment load- Evap. Fan motors MHE etc. (kW)	Total Heat transferred from various above sources in a day	
Total load for Ante-room	Consider similar calculations with outside ambient	

Compressor Operation Hours / day	Pull Down Period	Indicates compressor running hrs. during pull down time of the product in a day	
	Holding period	Indicates compressor running hrs. after the product reaches the room storage temperature	
	Defrosting period	Duration of Defrosting in a day	
Multiplier (Safety Factor)	Please state the multiplier used		
Total Refrigeration Description	Peak Period(kW)	Holding period(kW)	

Cooling System Design details

xii) Cooling System Configuration : Mechanical Refrigeration

Type of Refrigerant	Provide the technical name of the refrigerant
Total Refrigeration System Capacity	Provide the total refrigeration capacity in KW.
Type of System	Direct expansion. Gravity feed/ overfeed/ secondary pump
Type of compressors	Reciprocating / screw/ scroll
Type of capacity control used	Step less/ step in / auto unloading of cylinders
Specify Unloading steps in percentage	Screw compressor from 10 to 100% Reciprocating from 25 to 100%
Type of condensers	Atmospheric/ Evaporative/ water cooled/ air cooled.
Cooling Towers (if applicable)	Natural draft/ induced draft
Type of Evaporator / Air cooler	Ceiling of floor mounted- induced draft/ forced draft/ dual discharge
Type of defrosting system	Air/ water/ electric/ hot gas
Humidification- System &Control	Describe the method of humidification equipment used

Signature of Consultant

Signature of applicant

Refrigeration Equipment Details

xiii) Compressor / Rack Detail

Compressor / Rack Type	Qty.	Comp RPM	Operating Parameters	Refrigeration	Power Consump	Total connec	Remarks Working /
------------------------	------	----------	----------------------	---------------	---------------	--------------	-------------------

Make & Model			SST / Cond. Temp (°C)	Capacity (kW)	tion (kW)	ted motor (kW)	stand by
					Full load:		
					Part load:		

xiv) Condenser details

Condenser Type Make & Model	Qty.	Operating Parameters Cond. Temp (CT) WBT water in/out temp. °C	Condenser Heat rejection Capacity (kW)	Electric fan/ Pump Motor Rating (kW)	Total Electric power (kW)	Remarks Working / stand by

xv) Cooling Tower Details (If Applicable)

Cooling Tower Type Make & Model	Qty.	Operating Parameters DB & WB water Temp. in / out (°C)	Cooling Tower Capacity (kw)	Fan & Pump Capacity (CMH, LPS) & Motor kW	Total Electric power (kW)	Remarks Working / stand by

xvi) Pressure Vessels

Description	Type : Horizontal Or Vertical	Refrigerant	Operating Temperature & Pressure	Construction Shell , Dish ends & Nozzles	Total refrigeration load	Holding Volume
Low Pressure						
High Pressure						

Note : The design & Testing of the pressure vessel should comply with ASME Sec. VIII Div. 1.

xvii) Evaporators / Air cooling Units (ACU)

ACU Type Make & Model	Nos .	Operating Parameters Evap. (SST) & TD* (°C)	Cooling Capacity (kW)	Air Flow(CMH) & Face velocity (m/s)	Material of Coil Tubes & Fins	Fin Pitch (mm)	Total fan electric Power (kW)

*TD - Temperature difference between Evap. (SST) °C & return Air (at coil inlet).

Note: Please attach detailed technical performance data sheets of each equipment namely compressors, Condensers, Cooling Towers, Air Cooling Units giving General layout and dimensions duly certified by the respective equipment manufacturers with reference to the relevant codes & Standards.

Signature of Consultant

Signature of applicant

xviii) Electrical Installation

Total connected Load	Specified the total connected electrical power in kW
Estimated power requirement at Peak Load Period	Provide the maximum power consumed during peak demand in kW

Estimated power requirement at Holding Load Period	List the power consumed during holding period in kW
Estimated power requirement at Lean Load Period	List the power consumed during lean period in kW
Capacity of Transformer	Provide the rated capacity of the transformer in KVA
Size of capacitor	Provide the size of capacitor bank for power factor correction & their operation
Make & capacity of stand by D.G. Sets	Provide the make and rated capacity of the generator in KVA

xix) Material Handling Procedure

Procedure	Brief Description
Material handling procedures & Equipments	Describe the details of product movement inside the cold storage and equipment used
Capacity of mechanized belt conveyor if any -Rating of Motor	Electric motor capacity in KW connected for lifts/ hoists/ conveyors etc.
Any other device please Specify	

Attach a Plan & Layout of the proposed Cold Store unit approved by a registered Architect

xx) Safety Provisions: Mandatory

Include machine room ventilation system for self-containing

Fire Fighting equipment as per Fire safety standards of State Fire Department installed	Yes/No All fire-fighting equipment complied as per state fire-fighting department
Refrigerants Leaks detections system	Specify the use of leak detection system
Safety devices - LP/H P cut outs, safety valves, shut off valves etc. installed	
Emergency lighting in Cold chambers & other areas installed	
Lighting Arrestors Installed	
Any other Safety Provisions installed (describe)	

Signature of Consultant

Signature of applicant

xxi) Energy Saving Equipment & Measures

Details of Energy Saving Devices	Brief Description and savings
Light Fixtures (Internal/ External)	Provide type of light fixtures-CFL/LED numbers and wattage
Natural Lighting for general areas	List of provision for natural lighting is included

VFD / Electronic Technology for fans / compressors	Control of fan motors speed using variable frequency drives or by electronic technology in 2 steps fan for evaporators
Refrigerant Controls and Automation	List of automation controls used to save energy for optimizing the performance of the refrigeration system
Air Purger	Provide the type and operation of air purger
Power Factor Controller	Measure of efficient use of electrical power in the connected system
Energy recovery	List use of energy recovery for ventilation system
PLC Control & Data Acquisition	Automation for monitoring and control of the parameters and refrigeration plant
Any Other Components	List use of water treatment for recycling of water and rainwater harvesting etc.

xxii) Estimated Performance Parameters of Proposed Cold Store

Parameters	Peak period	Holding Period
Coefficient of Performance (COP) of the Cold Store Unit	Specify COP of the cold storage during peak and holding period	
Power consumption (kWh / Day)	Power consumption during peak and holding period	
Prevailing Electricity Cost	Provide prevailing electricity cost in Rs/kWh	

xxiii) Brief description of any other technologies or infrastructure used

Reefer trucks operated (if any)	
Specialized packaging lines (if any)	
PLC Automation (if any)	
Dock Levellers systems (if any)	
Alternate energy options (if any)	
Modern Pack-house (if any)	
CA technology (if any)	
Others	

Append details in separate data sheets for 'add on components' if also applying for these components.

All mandatory rules & regulations (BIS, ISO, IS etc.) relevant to the items must be complied with.

Place
Date

Signature and
Name of Applicant with seal

Place
Date.....

Name in Capital Letters
Signature & Seal of Consultant
who has designed Cold Storage
and is going to provide supervision
during Construction and commissioning

List of National Horticulture Board Offices

<p>National Horticulture Board Plot No. 60, 3rd Floor, Krishna Apartment, Azad Society, Ambawadi Ahmedabad-380 015 Tele/Fax :079-26766416, 26766413 E-mail : nhbahd@yahoo.co.in</p>	<p>National Horticulture Board HPMC, 2nd Floor, Nigam Vihar, Shimla-171 002 Tele/Fax :0177-2622908/2623801 E-mail : nhbhp2004@yahoo.com</p>
<p>National Horticulture Board No.14/43, 2nd Floor, 1 & 2 Stage Industrial Suburb, Tumkur Road, Yeshwantpur Bangalore-560 022 Tele/Fax 080-23371935, 23374149 E-mail : nhbblr@yahoo.com</p>	<p>National Horticulture Board Horticulture Complex Rajabagh Srinagar-190008 Tele Fax 0191-2474349 (PP) E-mail :nhbjammu@rediffmail.com</p>
<p>National Horticulture Board R-24, 2nd Floor, Near Hindustan Times MP Nagar, Zone-1, Bhopal – 462011 (MP) Tele/Fax :0755 – 2550768,2761741 Email :bplnhb@rediffmail.com</p>	<p>National Horticulture Board No. UR-10, Uppalam Road, Statue, Thiruvanantha Puram-695001 (Kerala) Tele/Fax : 0471-2470505, 2470506 E-mail : nhbtvm@gmail.com</p>
<p>National Horticulture Board N-1/7, I.R.C. Village, Nayapalli, Opp. CRPF Gate Bhubaneshwar- 751015(Odisha) Tele/Fax :0674-2558134,2559620 Email :nhbbbsr@gmail.com</p>	<p>National Horticulture Board Municipal Stadium Complex Vijayawada-520010 Tele/Fax 0866-2473351</p>
<p>National Horticulture Board Room No. 317, 4th Floor Central Facility Building, APMC Fruit Market Complex, Sector-19, Turbhe Vashi (Navi Mumbai)- 400703 Tele/Fax 022-27830107 E-mail : nbhpune@gmail.com</p>	<p>National Horticulture Board Hall No 307, A-2, 3rd Floor South Block, Bahu Plaza Rail Head Complex, Jammu-180 004 Tele/Fax :0191-2474349, 2474112 E-mail : nhbjammu@rediffmail.com</p>
<p>National Horticulture Board Mayukh Bhawan, 2nd Floor, Salt Lake, Sector-II Kolkata -700091 Tele/Fax: 033-23377182,23211259 E-mail : nhb_kolkata@yahoo.com</p>	<p>National Horticulture Board S.C.Panwar Market Yard, Commercial Complex No. 1, Peth Road Panchwati, Nashik-422003 Tele/Fax :0253-2534558,2533715 E-mail :nhbnashik@gmail.com</p>
<p>National Horticulture Board S.C.O. 85, 2nd Floor, Sector - 40-C Chandigarh-160 047 Tele/Fax :0172-2625249, 2625269 E-mail : nhb_chd@yahoo.co.in</p>	<p>National Horticulture Board MCAER Building 132/B, Bhambhurda Bhosale Nagar, Pune-411 007 Tele/Fax : 020-25530582-83 E-mail : nhb pune@gmail.com</p>

<p>National Horticulture Board 19-22, (Garage) Krishi Bhawan New Delhi-11001 Tele/Fax 011-23097015,23073019 E-mail :nhbdelhi@gmail.com</p>	<p>National Horticulture Board C/o. Superintendent Garden, Shahjan Park, Tajganj, Agra-282001 Tele/Fax 0562-2331470</p>
<p>National Horticulture Board Chang Choop Building Near Nayuma Television, Tibet Road, Gangtok-737 101 Tele/Fax :03592-208453,220975 E-mail : nhbgangtok@yahoo.com</p>	<p>National Horticulture Board C/O Deputy Director (Horticulture), Govt. of UP, Company Bagh, Kachahari, Varanasi-221001 E-mail : nhbvaranasi@gmail.com</p>
<p>National Horticulture Board Chhibber House, 4th Floor, Dispur P.O., Guwahati-781 005 Tele/Fax :0361-2343719, 2340695 E-mail : nhbghy@gmail.com</p>	<p>National Horticulture Board Residency Kothi (Complex) Indore-452001 Tele/Fax 0731-2701522</p>
<p>National Horticulture Board No.2, 5-9-195, William Niwas, Chirag Ali Lane, ABIDS, Hyderabad-500 001 Tele/Fax :040-23200806, 23201140 E-mail : nhb.govhyd@gmail.com</p>	<p>National Horticulture Board Laxmi Niwas, Krishi Bhawan Kankey Road, Ranchi-834 008 Tele/Fax :0651-2230132,2233832 E-mail :nhbranchi@gmail.com</p>
<p>National Horticulture Board Second Floor, Modak Priyay, Plot No. 16 & 17, Near New, Atish Market, Shipra Path, Mansarovar, Jaipur 302 020 Tele/Fax :0141-2399405, 2390818 E-mail : nhbjpr@yahoo.com</p>	<p>National Horticulture Board 310/311, 3rd Floor, I.D. Shopping Centre Near Shivaji Stature, Sahara Darwaja Surat-395003 Tele/Fax 0261-2311343</p>
<p>National Horticulture Board C/o, Director of Horticulture Horticulture Complex, Cantt. Road Jalandhar (Punjab) Tele/Fax 0181-223048</p>	<p>National Horticulture Board Plot No. 142, 1st Floor Seikkilar Street Extension Bibikulam Madurai -625002 Tele/Fax 0452-2531195</p>
<p>National Horticulture Board C/o, Director of Horticulture 2, Sapru Marg Udyan Bhawan Lucknow-226001 Tele/Fax 0522-2623374/2202420,4072096 E-mail: nhblko@rediffmail.com</p>	<p>National Horticulture Board H.No. 470 Behind Ashoka Cinema Diwan Colony Karnal-132001</p>
<p>National Horticulture Board Module No.37, 2nd Floor, SIDCO Readymade Garment Complex, Industrial Estate Guindy, Chennai-600 032 Tele/Fax :044-22501151/22500965 E-mail : nhbtn@yahoo.com</p>	<p>National Horticulture Board C/o, Directorate of Horticulture Room No. 13, 2nd Floor Kheti Bhawan, Ranjeet Avenue Amritsar- 143001 Tele/Fax 0183-2500236</p>

<p>National Horticulture Board 401, 4rth Floor, Lotus Plaza, Near Lakshmi Bhawan, Old Post Office Road. Gokulpeth, Nagpur-440 010 Tele/Fax :0712-2525030,2523110 E-mail : nhbnagpur@rediffmail.com</p>	<p>National Horticulture Board Vikas Bhawan, Fazilka Road Abohar-152116 Tele/Fax 01634-230822</p>
<p>National Horticulture Board Room No 501, 502, 5th Floor, Boring Road, Verma Centre Patna-800 001 Tele/Fax :0612-2541218,2541128 E-mail : nhbpatna@gmail.com</p>	<p>National Horticulture Board H.No. 42, First Floor, Jal Vihar Colony, Near Rotary Club of India, Telibandha Raipur-492001 (Chhattisgarh) Tele/Fax :0771-2423992 E-mail : nhbraipur@yahoo.co.in</p>
<p>National Horticulture Board Naveen Sabzi Mandi Ashthal, Krishi Utpadan Mandi Samiti, Niranjanpur, Dehradun- 248171 Tele/Fax 0135-2761922,2762767,2725517 E-mail : nhb_dehradun@yahoo.com</p>	<p>National Horticulture Board C/o Regional Institute of Rural Development, Delhi-Saharanpur Road, Baraut (Baghpat) Tele/Fax :01234-251723 E-mail : nhbbaraut_2007@yahoo.com</p>