

SELECTION OF TECHNOLOGY & TECHNICAL EXPERTS

- **Engineering, Procurement & Construction (“EPC”) Contractor**
- **Borrower’s Technical Advisor**
- **Lender’s Technical Advisor**

PROJECT DOCUMENTS

- **EPC Contract**
- **Power Purchase Agreement (“PPA”)**
- **Operations & Maintenance (“O&M”)**
- **Spare Parts Contract**
- **Civil Works Contract**

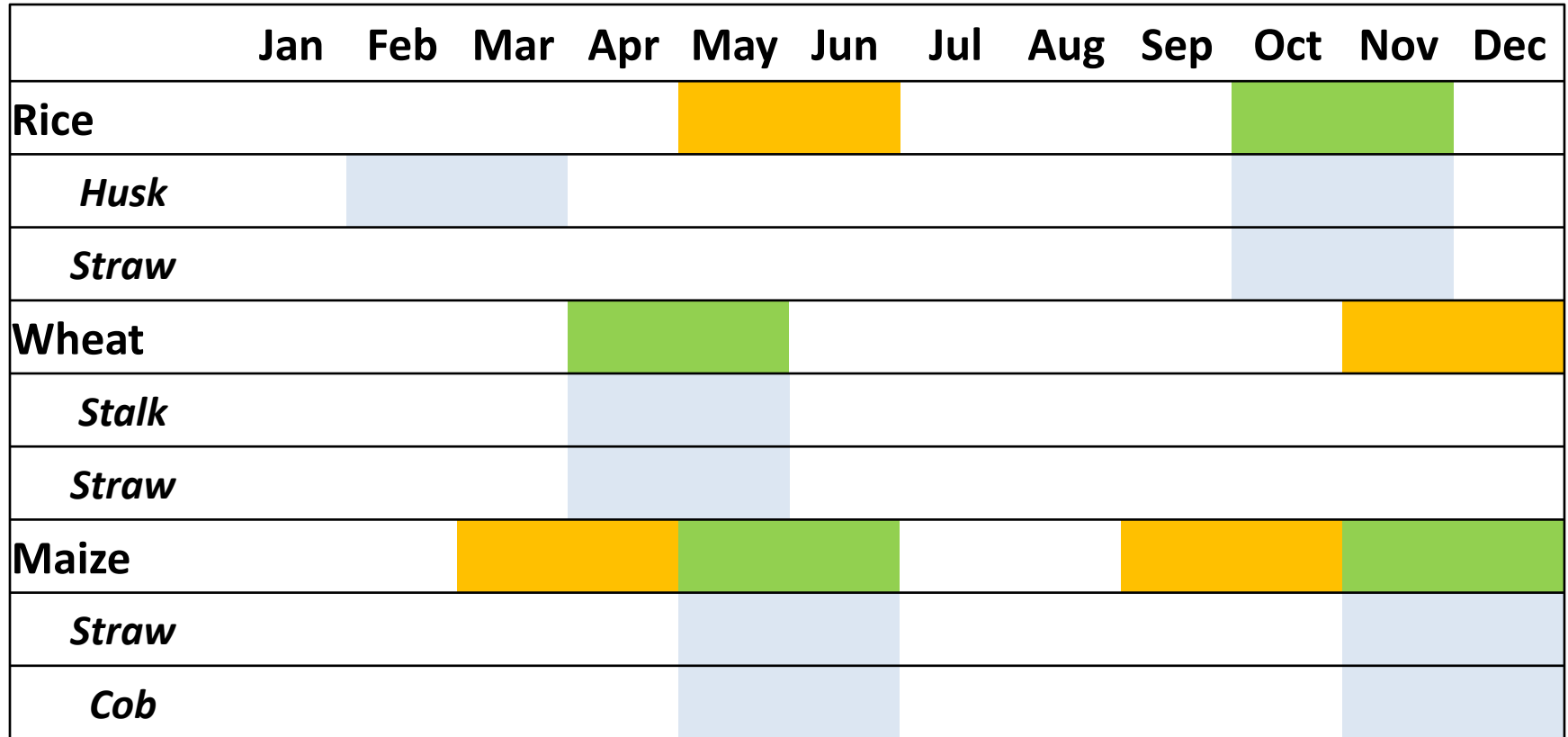
OPERATION & MAINTENANCE

- **EPC Contractor to provide O&M Services**

OPERATION & MAINTENANCE

- **EPC Contractor to provide O&M Services**

CROP CALENDAR WITH BIOMASS AVAILABILITY



Cultivation
 Harvesting
 Biomass Availability

Crop Calendar Punjab Centric though slight variations for other provinces.

TOTAL PRODUCTION OF MAJOR CROPS IN PUNJAB

Production in “000” Tons

Year	Wheat	Rice	Maize	Total
2000-01	15,419.00	2,577.00	748.5	18,744.50
2001-02	14,594.40	2,266.00	741.9	17,602.30
2002-03	15,355.00	2,579.70	882.9	18,817.60
2003-04	15,639.00	2,871.40	1,019.80	19,530.20
2004-05	17,375.00	2,980.30	1,934.60	22,289.90
2005-06	16,776.00	3,179.60	2,319.40	22,275.00
2006-07	17,853.00	3,075.50	2,161.90	23,090.40
2007-08	15,607.00	3,286.00	2,694.00	21,587.00
2008-09	18,420.00	3,643.00	2,627.20	24,690.20
2009-10	17,919.00	3,713.00	2,501.50	24,133.50
2010-11	19,041.00	3,384.00	2,959.20	25,384.20
2011-12	17,738.90	3,277.00	3,441.70	24,457.60

Pakistan Bureau of Statistics

PRODUCTION OF RICE NEAR DASKA

Production in "000" Tons

Year	Sialkot	Narowal	Gujranwala	Sheikhupura	Kasur	Sargodha	Hafizabad	Total
2000-01	262.5	88.0	419.3	412.4	94.1	49.6	187.2	1,513.1
2001-02	246.7	94.0	391.0	373.6	85.0	40.9	168.8	1,400.0
2002-03	241.0	94.8	436.4	417.3	86.3	44.1	203.0	1,522.9
2003-04	303.4	131.4	452.0	428.8	104.1	46.6	196.0	1,662.3
2004-05	294.1	111.2	465.4	455.2	117.1	63.0	217.4	1,723.4
2005-06	150.1	122.4	299.1	307.9	133.7	64.2	226.8	1,304.2
2006-07	322.6	124.5	445.3	284.0	123.7	63.2	204.1	1,567.4
2007-08	350.8	154.6	487.2	299.9	144.1	73.4	223.3	1,733.3
2008-09	341.0	143.0	494.9	310.1	179.8	83.2	245.9	1,797.9

Pakistan Bureau of Statistics

In 2008-09, ~600,000 tons husk & ~ 2,400,000 tons straw was produced in the region.
For Allahdin Powers, Annual Biomass requirement is 31,200 tons.

Greener energy: issues and challenges for Pakistan

PRODUCTION OF WHEAT NEAR DASKA

Production in "000" Tons

Year	Sialkot	Narowal	Gujranwala	Sheikupura	Kasur	Sargodha	Hafizabad	Total
2000-01	444.8	201.5	612.2	882.0	526.4	476.1	345.8	3488.8
2001-02	429.9	210.7	590.8	788.6	441.0	473.5	340.8	3275.3
2002-03	440.0	244.6	604.1	767.1	424.7	507.0	367.1	3354.6
2003-04	464.8	299.5	647.4	817.2	416.8	490.9	357.9	3494.5
2004-05	504.9	339.9	711.6	892.9	510.2	569.1	373.2	3901.8
2005-06	530.3	308.1	678.3	514.6	504.7	529.1	386.9	3452.0
2006-07	507.9	318.4	667.0	452.0	510.9	545.4	392.3	3393.9
2007-08	509.4	319.1	691.9	427.5	486.3	468.8	425.2	3328.2
2008-09	543.6	311.5	755.0	496.1	577.4	595.9	464.8	3744.3

Pakistan Bureau of Statistics

In 2008-09, ~5,550,000 tons of wheat straw was produced in the region.

Greener energy: issues and challenges for Pakistan

PRODUCTION OF MAIZE NEAR DASKA

Production in "000" Tons

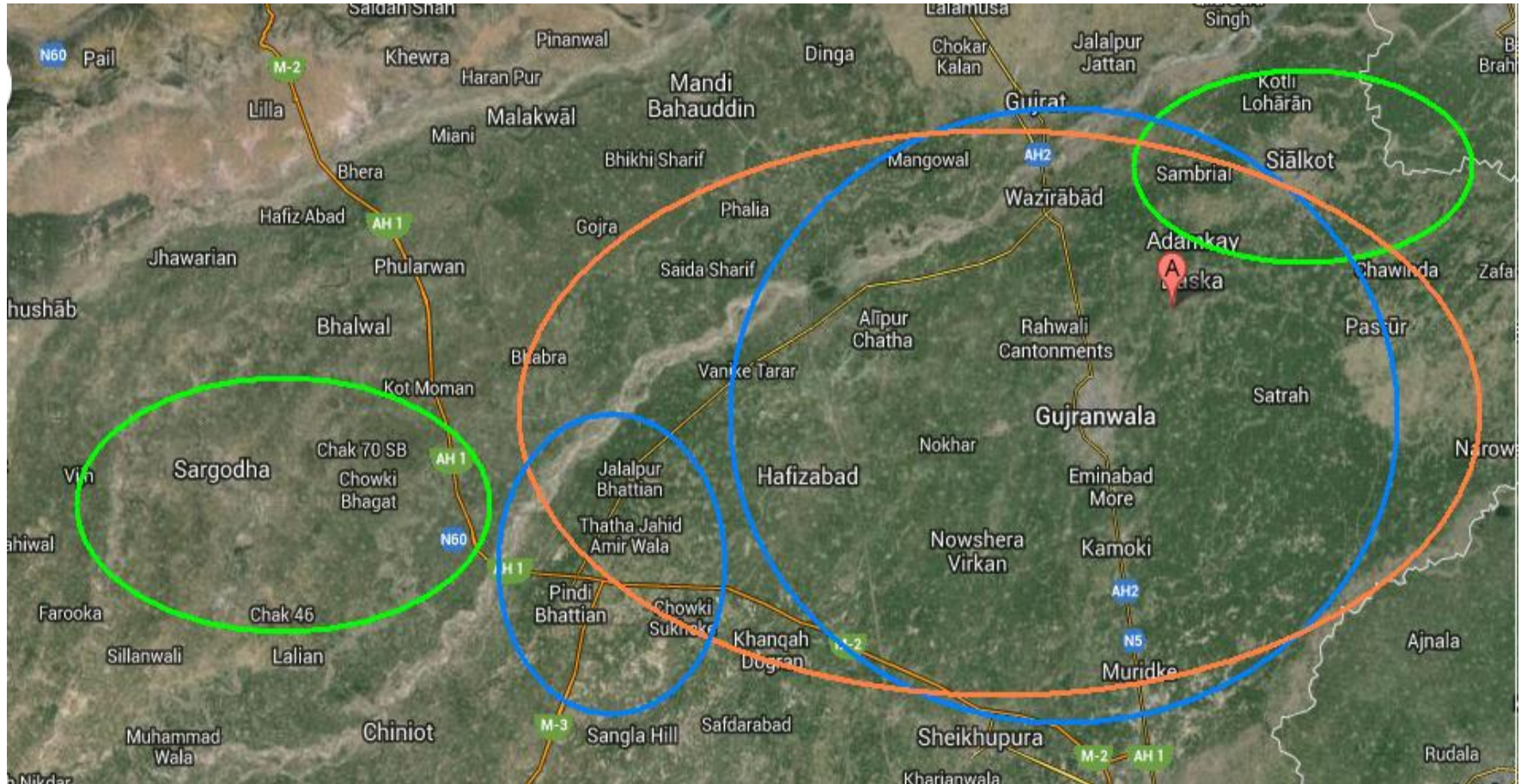
Year	Sialkot	Narowal	Gujranwala	Sheikupura	Kasur	Sargodha	Hafizabad	Total
2000-01	2.8	0.9	1.6	14.6	15.2	40.9	1.8	77.8
2001-02	3.2	0.9	2.3	16.5	14.7	33.0	1.9	72.5
2002-03	2.8	1.0	1.7	16.6	17.2	36.9	1.9	78.1
2003-04	2.9	0.9	1.9	17.5	14.4	38.8	1.8	78.2
2004-05	4.1	0.0	1.4	16.6	64.9	38.5	2	127.5
2005-06	7.5	1.0	1.1	8.3	76.5	40.6	2.2	137.2
2006-07	8.5	0.8	1.2	8.5	79.8	72.0	2.3	173.1
2007-08	20.8	1.2	2.9	6.8	91.0	78.4	3.2	204.3
2008-09	22.1	1.3	4.5	6.4	131.5	79.0	3.3	248.1

Pakistan Bureau of Statistics

In 2008-09, ~ 496,200 tons maize straw and ~ 74,430 tons of corn cob was produced in the region.

Greener energy: issues and challenges for Pakistan

AGRICULTURE REGION OF PUNJAB

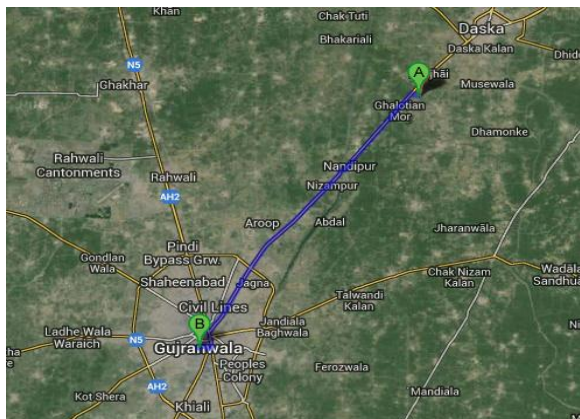


○ Rice

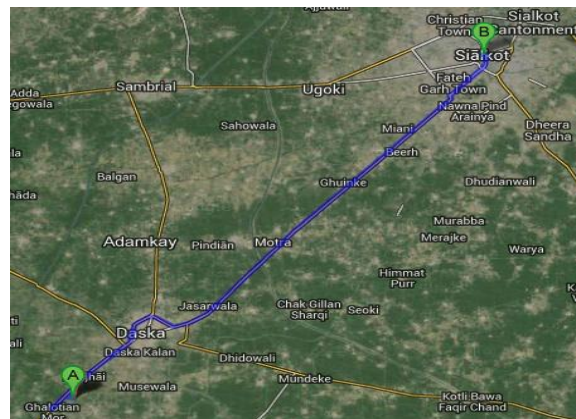
○ Wheat

○ Maize

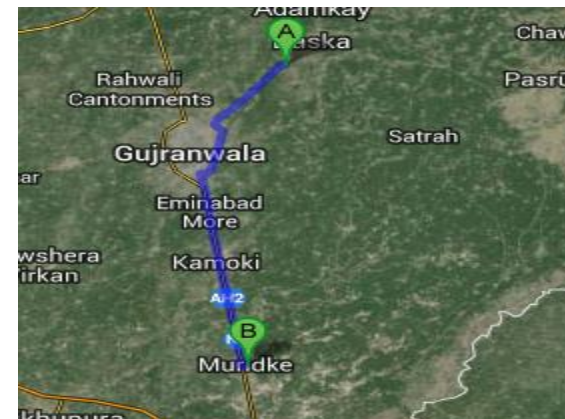
DISTANCE OF ALLAHDIN POWERS FROM MAJOR CROP GROWING REGIONS



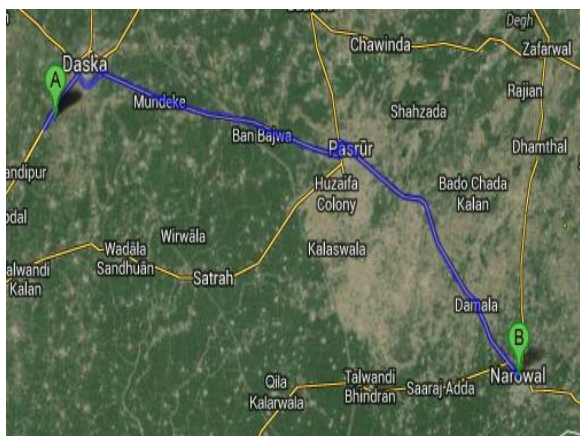
Gujranwala ' 20km



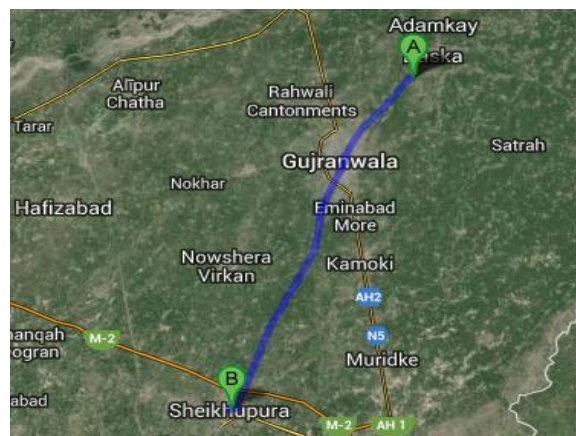
Sialkot ' 35km



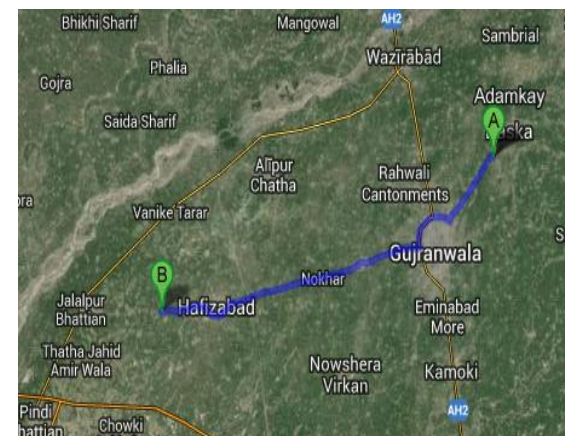
Muridke ' 60km



Narowal ' 65km



Sheikhpura ' 75km



Hafizabad ' 80km

AGRICULTURE BIO-MASS PLAN FOR ALLAHDIN POWERS

Cost in RS/ KG	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rice Husk	5.8	5.4	5.4				6.8	6.8	6.8	5.4	5.4	5.8
Rice Straw										3.4	3.4	
Wheat Straw			5.4	5.4								
Corn Cobs					4.9	4.9					4.9	4.9
Maize stalk					4.9	4.9					4.9	4.9

COST SAVING TO ALLAHDIN STEEL

Year	10% increase in Grid Tariff		5% increase in Grid Tariff		0% increase in Grid Tariff	
	Unit Cost from Grid	Unit Cost from In-house Generation	Unit Cost from Grid	Unit Cost from In-house Generation	Unit Cost from Grid	Unit Cost from In-house Generation
2008	6.22	-	6.22	-	6.22	-
2009	6.87	-	6.87	-	6.87	-
2010	8.35	-	8.35	-	8.35	-
2011	8.75	-	8.75	-	8.75	-
2012	10.60	-	10.60	-	10.60	-
2013	16.70	-	16.70	-	16.70	-
2014	18.37	-	17.54	-	17.54	-
2015	20.21	-	18.41	-	18.41	-
2016	22.23	14.04	19.33	14.04	18.41	14.04
2017	24.45	15.59	20.30	15.59	18.41	15.59
2018	26.90	16.63	21.31	16.63	18.41	16.63
2019	29.59	17.77	22.38	17.77	18.41	17.77
2020	32.54	19.20	23.50	19.20	18.41	19.20
2021	35.80	21.02	24.67	21.02	18.41	21.02

AGRICULTURE BIO-MASS PLAN FOR ALLAHDIN POWERS

Cost in RS/ KG	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rice Husk	5.8	5.4	5.4				6.8	6.8	6.8	5.4	5.4	5.8
Rice Straw										3.4	3.4	
Wheat Straw			5.4	5.4								
Corn Cobs					4.9	4.9					4.9	4.9
Maize stalk					4.9	4.9					4.9	4.9

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2008	6.22	-	6.22	-	6.22	-
2009	6.87	-	6.87	-	6.87	-
2010	8.35	-	8.35	-	8.35	-
2011	8.75	-	8.75	-	8.75	-
2012	10.60	-	10.60	-	10.60	-
2013	16.70	-	16.70	-	16.70	-
2014	18.37	-	17.54	-	17.54	-
2015	20.21	-	18.41	-	18.41	-
2016	22.23	14.04	19.33	14.04	18.41	14.04
2017	24.45	15.59	20.30	15.59	18.41	15.59
2018	26.90	16.63	21.31	16.63	18.41	16.63
2019	29.59	17.77	22.38	17.77	18.41	17.77
2020	32.54	19.20	23.50	19.20	18.41	19.20
2021	35.80	21.02	24.67	21.02	18.41	21.02

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Rice Straw										3.4	3.4	
Wheat Straw			5.4	5.4								
Corn Cobs					4.9	4.9					4.9	4.9
Maize stalk					4.9	4.9					4.9	4.9

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2009	6.87	-	6.87	-	6.87	-
2010	8.35	-	8.35	-	8.35	-
2011	8.75	-	8.75	-	8.75	-
2012	10.60	-	10.60	-	10.60	-
2013	16.70	-	16.70	-	16.70	-
2014	18.37	-	17.54	-	17.54	-
2015	20.21	-	18.41	-	18.41	-
2016	22.23	14.04	19.33	14.04	18.41	14.04
2017	24.45	15.59	20.30	15.59	18.41	15.59
2018	26.90	16.63	21.31	16.63	18.41	16.63
2019	29.59	17.77	22.38	17.77	18.41	17.77
2020	32.54	19.20	23.50	19.20	18.41	19.20
2021	35.80	21.02	24.67	21.02	18.41	21.02