

IRRICAN POWER CO-OPERATIVE LTD.



Photo 1: Drop 1 on the St. Mary Main canal

The SMRID Main Canal located west of the Town of Raymond on the north boundary of the Milk River Ridge is an ideal location for Green Power Production. There are a total of twelve drop structures located on this reach of canal. The drop structures can be developed individually or in combinations of two or three in order to maximize energy production. Power can normally be produced between April and October of each year with peak energy production occurring between June 15 and August 15. The IRRICAN Raymond and Chin hydro plants were constructed in the mid 1990's as 11 MW and 18 MW facilities, respectively. The IRRICAN Drops 4-5-6 hydro plant was completed in 2004 as a 7 MW facility. Characteristics of other potential sites are listed below.

Drops 1, 2 and 3

Head (Drop 1): 4.9 m Head (Drop 2): 4.9 m Head (Drop 3): 4.8 m <u>Combined head: 14.6 m</u>	Design Flow Rate: 44 m ³ /s Turbine Rating (individual): 2 MW <u>Turbine Rating (combined):</u> <u>6 MW</u>	Average Output (individual): 1.88 MW Average Output (combined): 5.28 MW Annual Energy Production (individual): 7,350 MW-hrs Annual Energy Production (combined): 20,700 MW-hrs
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Drop 7

Head Available: 4.8 m	Design Flow Rate: 44 m ³ /s Turbine Rating: 2 MW	Average Output: 1.88 MW Annual Energy Production: 7,350 MW-hrs
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Drop 9

Head Available: 3.6 m	Design Flow Rate: 44 m ³ /s Turbine Rating: 1.5 MW	Average Output: 1.4 MW Annual Energy Production: 5,500 MW-hrs
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Drop 10

Head Available: 3.1 m	Design Flow Rate: 44 m ³ /s Turbine Rating: 1.3 MW	Average Output: 1.2 MW Annual Energy Production: 4,750 MW-hrs
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Drop 11

Head Available: 5.2 m	Design Flow Rate: 44 m ³ /s Turbine Rating: 2.2 MW	Average Output: 2 MW Annual Energy Production: 7,950 MW-hrs
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Drop 14-15

Head Available: 15 m	Design Flow Rate: 36.9 m ³ /s Turbine Rating: 5 MW	Average Output: 4 MW Annual Energy Production: 17,000 MW-hrs
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Drop 17

Head Available: 5.25 m	Design Flow Rate: 36.9 m ³ /s Turbine Rating: 1.9 MW	Average Output: 1.5 MW Annual Energy Production: 5,850MW-hrs
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Chin- Stafford

Head Available: 12 m	Design Flow Rate: 30 m ³ /s Turbine Rating: 3.5 MW	Average Output: Annual Energy Production: 13,500 MW
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