

Pugh Chart and Analysis

Key Criteria	Weight	Baseline	Crank Device				Gearing		Electronics	
			Longer Crank Arms	One Crank arm	Non-crank option	Foot Powered	Increase Gear Diameter	Use a belt drive	Add Power Storage/ Capacitor	LED Meter
Cost	0.17	0	0	+	-	-	-	-	-	-
Effort Required	0.15	0	-	+	0	+	+	0	+	0
Long Life	0.05	0	0	0	0	0	0	-	0	0
Durable	0.05	0	0	-	0	-	0	-	0	0
Easy to Install	0.01	0	0	0	0	0	0	-	0	0
Ergonomic	0.25	0	-	0	0	+	+	0	+	+
User friendly	0.12	0	0	0	+	0	0	0	0	+
Within scope	0.1	0	+	+	+	+	+	+	+	+
Efficiency	0.1	0	-	0	+	+	+	+	+	0

Sum of Positives (+)	1	3	3	4	4	2	4	3
Sum of Negatives (-)	3	1	1	2	1	4	1	1
Sum of Sames (0)	5	5	5	3	4	3	4	5
Positives - Negatives	-2	2	2	2	3	-2	3	2

Weighted Sum of Positives (+)	0.1	0.42	0.32	0.6	0.6	0.2	0.6	0.47
Weighted Sum of Negatives (-)	0.5	0.05	0.17	0.22	0.17	0.28	0.17	0.17
Weighted Sum of Sames (0)	0.4	0.53	0.51	0.18	0.23	0.52	0.23	0.36
Weighted Positives - Negatives	-0.4	0.37	0.15	0.38	0.43	-0.08	0.43	0.3

Key Criteria	Weight	Baseline	Generator Positioning			
			Triangular Fixture	Adjustable Positioning Fixture		
Cost	0.17	0	-	-		
Effort Required	0.15	0	0	+		
Long Life	0.05	0	0	0		
Durable	0.05	0	0	0		
Easy to Install	0.01	0	0	-		
Ergonomic	0.25	0	+	+		

User friendly	0.12	0	+	0		
Within scope	0.1	0	+	+		
Efficiency	0.1	0	0	0		

Sum of Positives (+)		3		3		
Sum of Negatives (-)		1		2		
Sum of Sames (0)		5		4		
Positives - Negatives		-2		1		

Weighted Sum of Positives (+)		0.47		0.5		
Weighted Sum of Negatives (-)		0.17		0.18		
Weighted Sum of Sames (0)		0.36		0.32		
Weighted Positives - Negatives		0.3		0.32		

Feel free to edit the **Key Criteria** based on what you believe to be the most important. Also even though one of the presentations stated to try not to weight the criteria, go through the chart without any weights, then go back, weight the criteria and calculate the outcomes. Its just another data point we can present.